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CITY OF WINNIPEG

Health Dept

ANNUAL REPORT

OF THE

CITY HEALTH DEPARTMENT

FOR THE YEAR ENDING
31st DECEMBER
1919

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CITY OF WINNIPEG

Annual Report of the City Health Department

FOR THE YEAR ENDING
31ST DECEMBER
1919

COMMITTEE ON HEALTH
1919

Alderman I. Cockburn, Chairman.
Alderman A. H. Pulford.
Alderman G. Fisher.
Alderman E. Robinson.
Alderman A. A. Heaps.
Alderman R. H. Hamlin.
Alderman A. McLennan.
His Worship Mayor Gray
(ex-officio member).

STAFF

Medical Health Officer

A. J. Douglas, M.D.

Laboratory

Bacteriologist—J. H. Leeming, M.D.
Assistant—Miss M. Wilson.
Laboratory Boy—H. Robinson.

District Physicians

North—W. Turnbull, M.D.
South—O. C. Dorman, M.D.

Dental Clinic

Dr. R. H. Snyder, Dentist.

Sanitary Inspections and Scavenging Supervision Division

Chief Inspector—J. H. Pearson
Deputy Asst. Chief—W. F. Thornley.
Inspector—M. Agranovitch.
" —A. Aitken.
" —D. Braszchuk.
" —A. Barclay.
" —C. W. Chisholm.
" —J. Foggie.
" —H. Moore.
Inspectors' Clerk—W. Hanby.
Temporary Clerk—G. Duffield.
Supt. of Scavenging—J. W. Stewart.
Stables Foreman—R. J. Buckingham.

Asst. Chief—E. W. J. Hague.
Tenement Inspector—A. Officer.
Inspector—J. McHardy.
" —H. Olson.
" —O. S. Oliver.
" —P. Pickering.
" —S. J. Scheving.
" —H. B. Weston.
" —R. McQuillan.
Interpreter-Inspector—J. Miller.
Asst. on Scavenging Division—
Inspector D. Little.
Team Foreman—J. Coulter.

Communicable Diseases Division

Chief Inspector—W. J. T. Watt.
Inspector—G. Hanby.
" —B. C. Brough.
" —H. H. Marshall.
" —C. H. Hargrave.
" —A. Paull.*
Acting-Inspector—H. G. Triggs.

Tuberculosis Nurse—Miss K. Vanetta.
" " —Miss A. O'Neill.
" " —Miss B. M. Gray.
" " —Miss H. A. Weiss.
Record Clerk—Miss W. G. Aldham.

*On Military Service.

Smallpox Hospital

Caretaker—P. Bennett.

Division of Records and Statistics and Bureau of Child Hygiene

Secretary and Manager—A. G. Lawrence.
Temporary Clerk—Mrs. J. M. Graham.

Stenographer—Miss M. Ryan.
Junior Clerk—G. Moore.

Babies' Milk Depot

Attending Physician—E. Richardson, M.D.
" " —R. F. Rorke, M.D.
Dietitian—Miss A. Graham.
Asst. Dispenser—Mrs. A. Johnson.
Assistant—Miss B. Baxter.
" —Miss C. McNaughton.
Caretakers—P. Broadley.
" —Mrs. P. Broadley.

Child Welfare Nurses

Nurse—Miss M. M. Wonnacott.
" —Miss A. J. Attrill.
" —Miss M. Barr.
" —Miss M. E. McCallum.
" —Miss L. Spratt.
" —Miss C. Maddin.
" —Miss P. Adair.
" —Miss A. Moore.
" —Miss C. Munro.
" —Miss L. A. Schwalm.
" —Miss A. H. McPherson.
" —Miss J. Stelfox.

Dairy Division

Chief Inspector—E. C. Brown.
Inspector—F. Hudson.
Creameries Inspector—F. Lutley.
Veterinary Inspector—E. S. Bowman, V.S.

Food Division

Chief Inspector—A. Rigby.
Inspector—A. W. Foote.
" —G. R. Mines.

REPORT OF THE MEDICAL HEALTH OFFICER

City Health Department,
Winnipeg, Man., April 12, 1920.

Chairman and Members of the Committee on Health.

Gentlemen:

I have the honor to submit for your consideration the report of the Health Department for the year 1919. This report includes, as usual, the reports of the various sub-heads of the Department, together with a statement of the cost of the year's work.

STATISTICS

The number of deaths, excluding stillbirths, was 2,108. Assuming the population to be 183,378 (City Assessor's figures), which seems a conservative estimate, this gives a death rate of 11.49. This is a reduction of 3.25 points from the rate of 1918. It must be remembered, however, that 1918 was a very exceptional year and that the outbreak of Influenza was responsible, in a large degree, for what was for this City a high death rate. The rate of 11.49 is a fair average for normal years, but even in this, influenza plays a part, as this disease was taking an extensive toll during the early months of the year.

The number of deaths in children under one year of age was 562, giving a mortality rate of 106.9 per 1,000 living births. This is an increase of 15.1 points over 1918, when we attained our record figure of 91.8. This increase was almost entirely due to the Influenza Epidemic, the rate for the latter 8 months of the year being 95. We look for an improvement in 1920. The Babies' Milk Depot with its doctors and staff of visiting nurses carried on as usual its effective work, at times laboring under considerable handicaps through conditions over which it had no control. With the expansion of this Department, which we anticipate this year, results are bound to accrue.

The number of births, excluding stillbirths, was 5,254, giving a birth rate of 28.65.

Financial Statement for the Year 1919

DEPARTMENTAL EXPENDITURES

Administration and statistics		$ 10,139.38
Bacteriological Laboratory		6,337.44
Treatment and Prevention of Communicable Diseases—		
Acute communicable diseases	$11,553.88	
Tuberculosis	7,267.43	
Smallpox	3,502.10	
Epidemic Influenza	4,569.48	
Automobile service	1,035.79	
		27,928.68
Sanitary inspections and scavenging supervision		39,688.48
Food and dairy inspection		13,033.75
Child Welfare—		
Babies' Milk Depot operating	$16,534.60	
Visiting nurses	12,979.19	
		$ 29,513.79
Medical Relief—		
District physicians	$ 1,247.75	
Dental clinic	1,368.81	
		$ 2,616.56
Gross departmental expenditure		$129,258.08

REVENUE

(Credited to the City's Revenue Account)

Police court fines and costs	$ 813.40	
Fees for fumigation	554.90	
Fees for laboratory work	399.10	
Sale of infants' feedings at Milk Depot	3,549.07	
		5,316.47
Net departmental expenditure		$123,941.61

COST PER CAPITA

(Population, 183,378)

Gross departmental expenditure per capita	70.5
Net departmental expenditure per capita	67.6

REFUSE COLLECTION AND DISPOSAL

Collection of refuse—scavenging		$110,422.38
Disposal of Refuse—		
Nuisance grounds operating	$ 5,275.76	
Crematory No. 1 operating	1,689.85	
Crematory No. 1 maintenance	60.80	
Incinerator No. 2 operating—(credit)	22.00	
Incinerator No. 2 maintenance	70.30	
Incinerator No. 3 operating	11,808.70	
Incinerator No. 3 maintenance		
		$ 18,883.41
Total		$129,305.79
Revenue collected for destruction of mercantile refuse and sale of horse hides		2,888.93
Net expenditure for refuse collection and disposal		$126,416.86

COST PER CAPITA

(Population, 183,378)

Gross cost of collection and disposal of refuse per capita	70.5
Net cost of collection and disposal of refuse per capita	68.9

Typhoid Fever

One hundred and fifty cases of typhoid fever were reported with 19 deaths, giving a rate of 10.3 per 100,000 of population. In 1918 there were 140 cases, 14 deaths and the rate was 7.6. Mortality rate per 100 cases—1919, 12.7; 1918, 10.0. Of these 150 cases, 65 were contracted outside the City and sent into local hospitals, 4 died. The corrected rate for the city is 7.4.

There was an outbreak in the months of April and May in which milk appeared to be the carrier of infection, although absolute demonstration of this fact was impossible in spite of a most searching investigation. The remainder were scattering cases due, in all probability, to infection from carriers in separate households. In twelve homes where patients were nursed, secondary cases developed—demonstrating what has been often referred to in previous reports—the undesirability of caring for typhoid in the home and the great advantage of hospitalization.

During the second half of the year the rate was unusually low. Water apparently played no part in spreading infection during the year.

SMALLPOX

Nineteen hundred and nineteen was an off-year for smallpox. Only two cases were reported, with no deaths. Both were in unvaccinated adults who contracted the disease while travelling outside the city. The type was very mild.

CHICKENPOX

Four hundred and fifty-six cases were reported against 236 in 1918—as usual with no deaths. A satisfactory feature of the chickenpox situation was that we found no case of smallpox diagnosed as chickenpox during the year. In past years this has been a prolific source of spread of the former disease. One reason for the increased number of cases was the work of the school nurses in following up absentee children to their homes; many cases were found by the nurses which would never have been seen otherwise.

MEASLES

Ninety-one cases and two deaths were reported during the year, against 1,685 cases and 9 deaths in 1918. The death rates per 100,000 population for 1919 and 1918 were 1.1 and 4.9 respectively. The mortality rate per 100 cases was 2.2 for 1919, with a rate of .53 for 1918.

This is the lowest number of cases of measles reported since the year 1901. The reason doubtless is that the seven outbreaks of this disease which have occurred during the past five years have used up most of the susceptible material, and that we may look for a period of partial immunity from this infection for at least a couple of years.

SCARLET FEVER

The total number of cases was 1,148; deaths 22, making the rate 12.0 per 100,000 population. In 1918 the number of cases was 227 with 10 deaths and a rate of 5.4. The mortality rates per 100 cases for 1919 and 1918 were 1.9 and 4.4 respectively.

The scarlet fever situation gave us considerable concern throughout the year. The type was unusually mild, which made control more difficult owing to the large number of missed and improperly diagnosed cases. The great majority of the cases were due to contact infection, but during the month of May the largest milk-borne outbreak that we have a record of in this city took place. The picture of cause and effect was very evident in this instance. On May 8th a group of cases was notified in the western part of the city where contact was not demonstrable, but a common source of milk supply was. On visiting the dairy under suspicion on this date, four cases of scarlet fever were found, all of a mild type with no physician in attendance. The milk from this dairy was distributed in the raw state. Delivery of this milk was stopped on May 8th, but cases kept occuring on the route until May 15th; the total number of cases from this source was 73, all of a mild type.

DIPHTHERIA

The total number of cases reported was 907, deaths 46, against 1,077 cases and 48 deaths in 1918. The death rates per 100,000 population for 1919 and 1918 were 25.1 and 26.1 respectively. The mortality rate per 100 cases for 1919 was 5.07, with a rate of 4.4. for 1918.

DIPHTHERIA, 1919

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Diphtheria Cases	50	66	59	50	58	53	30	35	85	162	118	141	907
Diphtheria Carriers	3	6	5	5	17	4			16	28	17	1	102
Secondary Cases	6	7	3	3	4	3	5	3	4	18	12	14	82
Return Cases	1				2		2		..		1	4	10
Unrecognized Cases	1	4		2	..	2	1			4		..	14
Outside Cases	4	9	6	2	1	2	3	2	6	7	5	7	54
Military Cases		....		4	1	2		2		8	2	1	20
Institutional Cases	1	4	4	3	10	2	1	3	3	6	3	3	43
Institutional Carriers		1			9		..			2	3	...	15

The above summary showing totals for the year indicates a slight improvement over 1918. The last four months of 1919 were responsible for over 500 cases, or better than half the year's total. In this city the fall and winter months are always more favorable for the spread of this disease owing to the population having to spend more time indoors with the possibilities for contact infection greatly increased. Nevertheless, it is to the disregard which many of our citizens appear to have for the mild sore throat and the disinclination to call a physician early in such cases--despite repeated warnings—that much of our diphtheria mortality is due. The importance of getting an early proper diagnosis of sore throats does not appear to be sufficiently realized, and, until a proper appreciation of the danger of delay in these cases is understood, we will continue to have deaths from diphtheria which never should have occurred.

Eighty-two secondary cases were recorded, most of which could have been avoided, as they were usually the result of carelessness in the home.

The Department offers every facility for free diagnosis and treatment of this disease. It is to be earnestly hoped that the public will take advantage of this and that we may be enabled to reduce our rate very materially during the coming year.

Antitoxin, as formerly, was supplied free whenever required. During 1919, 2,589,000 units was the amount distributed.

INFLUENZA

Total cases reported, 2,342; deaths, 301. In 1918 there were 13,042 cases and 915 deaths. The death rates per 100,000 population for 1919 and 1918 were 164.1 and 498.4 respectively. The mortality rate per 100 cases was 12.8 for 1919, with a rate of 7.00 for 1918.

The great epidemic of influenza which visited this city in common with most of the world and which started here in October, 1918, subsided in the month of February, 1919, but took on renewed vigor though in a less virulent form during the month of March. It died out almost completely about the middle of April, but throughout the year cases continued to be notified. During the latter half of the year it appeared that it was practically only the cases resulting fatally—cases complicated with pneumonia, etc.—that were notified, which accounts for the increased mortality rate over 1918. It is very questionable if these figures present the facts of the situation, as there is no doubt whatever that the type in 1918 was infinitely more severe than that of 1919. The discrepancy is due to the non-notification and non-recognition of mild cases during the latter year. At no time during the year was it thought necessary to put into practice the very drastic measures employed during 1918, and the Department was able to deal with cases requiring hospitalization or the provision of nurses for patients who remained at home.

Tuberculosis

The number of cases of tuberculosis of the lungs recorded is 315; deaths 132. In 1918, cases totalled 345; deaths 159. Mortality rate per 100,000 population for 1919 was 71.9; 1918, 86.6.

Tuberculosis, all forms, 177 deaths, against 208 in 1918. Rates per 100,000 population, 96.5 for 1919 and 113.2 for 1918.

It will be seen from the above figures that an improvement can be noted over 1918, in fact our tuberculosis rate has come steadily down since 1909, when the real campaign against this disease began.

During the year the usual agencies have been at work—our four nurses, the clinic at the General Hospital, the King Edward Memorial Hospital, the fine work accomplished by the Ninette Sanitorium, and the Anti-Tuberculosis Society with its ladies' auxiliary.

The decrease in cases and deaths reported for the year may be partially explained by the military cases not yet discharged from the army and receiving treatment in their own quarters at Ninette.

As has been stated in previous reports, much could be done if we had a down-town clinic, particularly so if this were open at night.

Medical Relief

A total of 368 persons were prescribed for at the office during the year, against 133 for 1918.

The total number of visits made by district physicians was 461; the preceding year's total was 606.

The number of vaccinations performed during the year totalled 1,372, a drop of 690 compared with the preceding year.

Encephalitis Lethargica

During the month of November, cases of this disease appeared in the city and quite an extensive outbreak took place. A full list of the cases is appended.

We were not able in a single instance to trace a connection between any two cases. They occurred apparently without exposure to infection, and in the light of our present knowledge as to cause, it is impossible to express an opinion as to method of spread. Our local cases were part of the somewhat widespread outbreak which prevailed throughout the western provinces during the latter part of the year. A considerable number of the cases on our list originated outside the city and were sent to local hospitals for treatment. The outbreak subsided almost as abruptly as it began, but cases continued to be notified up to the end of the year.

LETHARGIC ENCEPHALITIS

Summary of Cases

November, 1919.

Male	Female	Age	Occupation	Date of Report	Date of Symptoms	Deceased
M	....	55 yrs.		Nov. 5	....	Nov. 29
	F	31 yrs.		Nov. 7		Nov. 7
M	....	36 yrs.		Nov. 10	....	Nov. 8
M				Nov. 13		
M				Nov. 13		
M				Nov. 13		
	F	19 yrs.	Clerk—Store	Nov. 19	Oct. 28	Nov. 27
M	....	19 yrs.	Clerk—Bank	Nov. 19	Nov. 12	Nov. 19
M	....	38 yrs.	Tailor	Nov. 12	....	Nov. 12
	F	10 yrs.	School	Nov. 13	Nov. 10	Nov. 13
M		16 yrs.	School	Nov. 19	Oct. 28	
	F	38 yrs.	Housewife	Nov. 20	Oct. 30	
M	....	34 yrs.	Farmer	Nov. 22	Oct. 30	
M	....	65 yrs.		Nov. 22		
	F	23 yrs.	Housewife	Nov. 22	....	Nov. 29
M	....	56 yrs.	Tailor	Nov. 22	Nov. 16	Nov. 23
	F	27 yrs.	Housewife	Nov. 22	Nov. 16	
M	....	32 yrs.	Laborer	Nov. 22	Nov. 12	
	F	51 yrs.	Housewife	Nov. 24	....	Dec. 28
M	....	37 yrs.	Accountant	Nov. 19	Nov. 10	Dec. 19
M	....	9 yrs.	School	Nov. 25	Nov. 21	
M	....	25 yrs.	Soldier	Nov. 25	Nov. 19	
M	....	72 yrs.	Retired	Nov. 24	Nov. 22	Dec. 24
M	....	44 yrs.		Nov. 21		
M	....	45 yrs.	Laborer	Nov. 22	Nov. 17	Dec. 22
M	....	41 yrs.	None	Nov. 25	Nov. 20	Dec. 5
M	....	20 yrs.		Nov. 26		
M	....	16 yrs.		Nov. 28		
	F	7 yrs.	None	Nov. 28	Nov. 24	
	F	22 yrs.	Housemaid	Nov. 29	Oct. 31	
M	....	54 yrs.	Switchman	Nov. 29	Nov. 22	Nov. 30

December, 1919.

Male	Female	Age	Occupation	Date of Report	Date of Symptoms	Deceased
M		..		Dec. 1		
....	F	74 yrs.	None	Dec. 1	Nov. 16	Dec. 5
M	..	46 yrs.	Auctioneer	Dec. 3	Nov. 16	
M	...	30 yrs.	Pipe Fitter	Dec. 3	Nov. 24	
M	...	28 yrs.		Dec. 3		
M	..	50 yrs.	Laundry	Dec. 4	Dec. 2	..
M	.	47 yrs.	Mechanic	Dec. 4	Dec. 4	
..	F	12 yrs.	School	Dec. 5	Nov. 28	....
M	..	20 yrs.	Clerk	Dec. 4	Nov. 28	Dec. 6
M	.	31 yrs.	Stock Salesman	Dec. 5	Nov. 28	Dec. 6
..	F	44 yrs.	None	Dec. 5	Nov. 27	..
M		35 yrs.	Fireman	Dec. 5	Nov. 5	
..	F	37 yrs.	Housewife	Dec. 8	Nov. 6	
M	...	30 yrs.	Fireman	Dec. 9	Dec. 1	
M	...	22 yrs.	Waiter	Dec. 9	Dec. 9	
...	F	25 yrs.	Waitress	Dec. 9	Dec. 5	
..	F	26 yrs.	Stenographer	Dec. 9	Dec. 7	
M	.	25 yrs.	Traveller	Dec. 15	Dec. 1	
...	F	29 yrs.	Milliner	Dec. 16	Dec. 2	Dec. 17
...	F	23 yrs.	Housekeeper	Dec. 16	Dec. 13	
...	F	50 yrs.	Domestic	Dec. 16	Dec. 11	Dec. 17
....	F	11 yrs.	School	Dec. 17	Dec. 11	....
M	..	32 yrs.	School	Dec. 18	Dec. 16	Jan. 10
.	F	67 yrs.	None	Dec. 19		Dec. 22
M	.	47 yrs.	Plumber	Dec. 19		Dec. 20
...	F	18 yrs.	Stenographer	Dec. 22	Dec. 16	Dec. 22
M	..	72 yrs.		Dec. 20	Dec. 20	...
M	..	29 yrs.		Dec. 22	....	..
...	F	29 yrs.	Dye works	Dec. 22	Nov. 28	
....	F	22 yrs.	Stenographer	Dec. 26	Dec. 21	Dec. 30
....	F	54 yrs.	None	Dec. 27	Dec. 4	....
M	.	8 yrs.	School	Dec. 27	Dec. 15	Dec. 25
..	F			Dec. 27		
M	..	30 yrs.		Dec. 29		..
M	....	.		Dec. 29		
M	.	1½ mts.		Dec. 29	Dec. 23	Dec. 24
M	....	29 yrs.	Mechanic	Dec. 30	Dec. 23	Dec. 29
M	....	3 mths.		Dec. 31	Dec. 25	...

January, 1920.

Male	Female	Age	Occupation	Date of Report	Date of Symptoms	Deceased
....	F	33 yrs.		Jan. 2		
M	...	4 yrs.	None	Jan. 5	Jan. 2	...
M	....	27 yrs.		Jan. 10		Jan. 9
M	....	18 yrs.	Farmer	Jan. 10	Dec. 28	..
	F	14 yrs.	None	Jan. 14	Jan. 11	....
M	....	60 yrs.		Jan. 12	....	Jan. 13
	F	33 yrs.	Housewife	Jan. 14	Dec. 23	....
M	..	10 yrs.	School	Jan. 27	Jan. 14	Feb. 1
M	.	35 yrs.		Jan. 15		...
	F	45 yrs.		Jan. 21		...
M	.	32 yrs.		Jan. 21	..	..
	F	24 yrs.	None	Feb. 2	Jan. 23	.
	F	34 yrs.	Housewife	Feb. 9	Feb. 1	
M	....	11 yrs.		Feb. 5	.	.
...	F	7 yrs.		Feb. 7		...
M	..	11 mths.		Feb. 19	Jan. 28	Feb. 15

LETHARGIC ENCEPHALITIS

	November, 1919		December, 1919		January, 1920	
Females.	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 5						1
6-10	2	1				
11-15	1		1		1	
16-20	2		1			
21-30	3	2	5	3		
31-40	2	1	1		2	
41-50			2	1	1	
51-60	2		1	1	1	
61-70				1		
Over 70				1		
Female Total	12	4	11	7	5	1
Males.						
Under 5			2	1	1	1
6-10	1		1	1	1	
11-15						
16-20	4	1		1	1	1
21-30	1		8		1	1
31-40	5	3	3	1	2	1
41-50	3	1	4	2		
51-60	4	3				
61-70	1					
Over 70	1		2			1
Male Total	20	8	20	6	6	5
Males and Females	32	12	31	13	11	6
Age not given	3		4			
Grand Totals	35	12	35	13	11	6

LEGISLATION ENACTED

Dominion

The Department of Health Act, chap. 35—R.S.C. (1919). This Act is of great importance to those engaged in trying to better health conditions. Briefly its provisions are as follows:

Sec. 2.—The establishment of a Department of Health for the Dominion and the appointment of a Cabinet Minister to be known as the Minister of Health.

Sec. 3.—Provides for the appointment of a Deputy Minister and such other officials as may be necessary.

Sec. 4.—The duties and powers of the Minister to extend to and include all matters and questions relating to the improvement or preservation of the health of the people of Canada *over which the Parliament of Canada has jurisdiction*, including: Co-operation with provincial authorities with a view to the co-ordinating of the efforts made or proposed to be made for improving the public health, the conservation of child life and the promotion of child welfare. The establishment and maintenance of a national laboratory for public health and research work. The inspection and care of immigrants and seamen, and the administration of Marine Hospitals. Supervision, as regards public health, of all railways, boats, ships and all methods of transportation. The supervision of federal public buildings and offices with a view of conserving and promoting the health of the Civil Servants and other Government employees therein. The enforcement of any rules or regulations made by the International Joint Commission promulgated pursuant to the treaty between the U.S.A. and His Majesty, relating to boundary waters, and questions arising between the U.S.A. and Canada so far as the same relate to the public health. The administration of the statutes mentioned in the schedule to the Act and of Acts amending the same, and also of all orders and regulations made under any of the said Acts. Subject to the Statistics Act, the collection, publication and distribution of information relating to the public health, improved sanitation and the social and industrial conditions affecting the health and lives of the people. Such other matters relating to health as may be referred to them by the Governor-in-Council.

Sec. 5.—The Governor-in-Council may make regulations as may be necessary to give effect to and carry out the objects of this Act and to impose penalties for violation.

Sec. 6.—The Dominion Council of Health is to consist of the Deputy Minister (chairman), the Chief Executive Officer of the Board of Health of each province, and such other persons, not to exceed five in number, as may be appointed by the Governor-in-Council. These five persons to hold office for three years.

Sec. 7.—*The Dominion Board of Health cannot exercise any jurisdiction or control over any Provincial or Municipal Board of Health operating under the laws of any province.*

The Acts scheduled and which the new Depatment is to administer are: The Quarantine Act, The Adulteration Act, The Public Works Health Act, The Leprosy Act, The Canada Shipping Act, and The Proprietary or Patent Medicines Act.

Dr. Amyot, the Deputy Minister, has already a splendid record and reputation as a sanitarian. We give this full digest of the powers contained in the Act in order that it may be noted as to what may be expected from the new Department. It will be seen that the duties of the Department lie more along the lines of research work and of consulting with and advising the health authorities of each province. It will doubtless collect, compile and distribute much valuable information and endeavour to co-ordinate the work of Provincial and Municipal Health Departments towards one common end, viz., the improvement of the public health and especially the conservation of child life.

Order-in-Council appointing the Housing Committee of the Privy Council and setting aside the sum of $25,000,000, "to be loaned at 5 per cent. to the various Provincial Governments for the purpose of encouraging the erection of houses of modern character to relieve congestion of population in cities and towns; to put within the reach of all working men, particularly returned soldiers, the opportunity of acquiring their own houses at actual cost of building and land acquired at a fair value, thus eliminating the profits of the speculator; to contribute to the general health and well-being of the community by encouraging suitable town planning and housing schemes." The money is to be loaned on the general security of each province. Certain conditions are, however, stipulated as to the minimum standards of grouping and construction, which must be required by the Provincial Government from all municipalities who borrow monies under the terms of the housing scheme. Twenty years is allowed for repayment, but this may be extended to thirty years in some cases.

Provincial

An Act respecting Housing in Urban Municipalities—This Act was passed for the purpose of enabling the Province to participate in the housing scheme outlined above. The Act provides for borrowing sums not exceeding $2,000,000 in all. The monies are to be loaned direct to municipalities only, although it might, under the terms of the Dominion Order-in-Council, have been arranged to advance monies to housing companies also. It is stipulated that returned soldiers are to have preference over other applicants for loans.

Public Health Act—Slight amendments; one providing that the Municipal Commissioner shall be ex-officio a member of the Provincial Board of Health, and the other amendments to Section 307, evidently asked for by the undertakers, providing that if a dead body intended to be shipped cannot reach its destination in twenty hours, it must be properly embalmed by a licensed embalmer. Formerly 30 hours was allowed.

Winnipeg Charter—Power is conferred on the City of Winnipeg to engage in the trade of milk and all milk products, including the erection of all works and plant, purchase of cows and the purchase or leasing of the necessary lands, either within or without the city.

Minimum Wage Act—An amendment bringing offices and places of amusement within the provisions of the Act. Under this Act several more trades were dealt with by the promulgation of regulations dealing with the hours of labor, sanitary conditions and wages, including knitting factories, tailoring establishments, millinery establishments, printing trades, ladies' hat factories, ladies' wear factories, garment and regalia factories, mail order establishments, and offices. Twenty-two trades have now been dealt with. The regulations are excellent, but unfortunately they only apply to industries where women and girls are employed. The regulations are to be administered by the Bureau of Labor of the Provincial Government.

An Act for the Prevention of Venereal Diseases—This Act provides that the Provincial Board of Health may make regulations with a view of preventing the spread of venereal diseases, and respecting the establishment, management and control of dispensaries for the examination and treatment of persons infected with such disease.

In July the Provincial Board promulgated such regulations and the same are now in force. As they are somewhat lengthy and the Department has already printed them in our July Bulletin, they are here omitted. Practising physicians are required to report all cases direct to the chairman of the Board of Health for the Province, who is given full executive powers in the matter of enforcing the regulations, so that they do not affect the routine work of this Department. It is worthy of note that cases are reported by serial number, or initial only and so long as it is evident that a patient is taking proper treatment no action is taken against him, but if a patient leaves his physician or dispensary and neglects treatment, thus becoming a menace to the community, means are provided for compelling him to take proper treatment and even for detention in case of necessity.

The Provincial Board of Health is to be congratulated on the introduction of these much-needed regulations and has already accomplished much in carrying them out. At the clinic conducted by the board, over 600 cases received treatment during 1919. This work is being supplemented by follow-up visits conducted by nurses, to see that patients carry out instructions. As the public better appreciates the objects of the clinic, many more patients will avail themselves of it.

By the City of Winnipeg

By-law No. 9800—This by-law requires that a license be taken out by the proprietor of every hotel. The Health Department is interested in the by-law to this extent: One of the conditions precedent to a license being issued for any hotel is that the Hotel Inspector is required to obtain from the Medical Health Officer a certificate that "the premises in which it is proposed to carry on such business are suitable and satisfactory for their purpose, and that they do not contravene any statutes or regulations of the Province of Manitoba or any City of Winnipeg by-laws or regulations governing the same. Until such certificate is furnished the License Inspector shall not issue any license in respect of any such places."

The passage of this by-law has entailed the thorough inspection of every hotel by the officers of the Health Department and has been the means of a great improvement in the sanitation of such premises.

Legislation Required

Some of the points in which our legislation is inadequate are as follows:

Public Health Act—Amendments to the smoke nuisance sections covering the discharge of soot from chimneys, and also the discharge of smoke, dust, gases or offensive odors from all chimneys instead of, as at present, to factory chimneys only; also a section to prevent the discharge of offensive smoke from steam rollers and portable boilers. A section dealing with noise nuisances. Better regulations for industrial establishments, with a view of preventing, as far as possible, occupational or venereal diseases. Sections regulating the sanitary condition of schools.

Winnipeg Charter followed by By-law—The supplying of adequate heat to tenants in apartment buildings. The provision of screen doors and windows for dwellings. (This amendment was asked for by the Social Welfare Commission at the last session of the Legislature but was refused). The cleanliness, sanitation, ventilation and heating of street cars and terminals. The extermination of rats in buildings and their exclusion by better methods of building construction. The extermination of bedbugs, cockroaches, or other insect pests in buildings. The removal of dirty wall paper from walls and ceilings before re-papering. The prevention of the use of water from any polluted source. The adequate ventilation of all churches, theatres, moving picture theatres, public buildings, factories, workshops, offices and dwellings, and the approval by the Health Officer of all mechanical systems of ventilation installed in such buildings. The better regulation of undertakers' establishments. The licensing, regulation and inspection of barber shops. For better regulating the keeping of domestic animals, including poultry. The licensing and regulation of gas fitters.

By-laws of the City of Winnipeg—The proper construction of windows and storm sashes in buildings other than dwellings so as to secure more effective ventilation. The licensing and regulation of lodging houses. Amendments to the Building and Health By-laws in order to secure the erection of a better class of dwellings and to regulate the large number of single family dwellings at present occupied by several families. The unprecedented shortage of dwellings, caused first by the five years of war and now by the high cost of building, renders it inadvisable, if not impossible, at the present time to deal very drastically with houses unlawfully converted into tenements.

INSTALLATION OF PLUMBING

As there were practically no sewers or water mains completed during the year, we were not able to reduce the number of outside privies in use; in fact as there were a number of new houses constructed on streets without sewers or water mains we are obliged to show for the first time since 1905 a slight increase, as follows:

December 31, 1918		*December 31, 1919*	
Earth pits in use	5	Earth pits in use	6
Brick or cement pits in use	421	Brick or cement pits in use	438
Total outside closets	426	Total outside closets	444
Increase			18

CHEMICAL CLOSETS

These are now reduced to four. No permits are now issued for this kind of closet.

Since 1905 the reduction of outside closets has been as follows:

	Box Closets	Earth Pits	Brick Pits	Total
June 30, 1905	6,153	186		6,339
December 31, 1905	3,182	80	1,020	4,912
June 30, 1906	2,255	747	1,325	4,327
December 31, 1906	1,105	662	1,626	3,393
December 31, 1907	80	201	1,535	1,816
December 31, 1908	25	108	1,492	1,625
December 31, 1909		53	1,432	1,485
December 31, 1910		52	1,300	1,352
December 31, 1911		47	1,171	1,218
December 31, 1912		31	1,014	1,045
December 31, 1913		38	838	877
December 31, 1914		18	648	666
December 31, 1915		14	504	518
December 31, 1916		9	447	456
December 31, 1917		11	422	433
December 31, 1918		5	421	426
December 31, 1919		6	438	444

EXTENSION OF SEWERS AND WATER MAINS

A few sewers and water mains were constructed towards the end of the year so that we hope to be able to have a number of houses sewer-connected and plumbing installed therein shortly.

The following list was prepared for the guidance of committees in charge of the ordering of new work:

LIST OF STREETS WITH FIVE OR MORE HOUSES REQUIRING SEWER OR WATER MAINS

FORT ROUGE

Street	Block	Houses	Total	Remarks
Centennial St	Academy Rd. to Kingsway	20		Sewer and water main under construction, Academy Rd. to Kingsway.
Centennial St.*	Kingsway to Haskins	4		
Centennial St.*	Haskins to Jackson	14		
Centennial St	Jackson to Lennox	1		
Centennial St	Lennox to Grant	1	40	
Lindsay St	Crescent Rd. to Academy	2		Water main constructed Academy Rd. to Haskins. Sewer ordered Academy to Haskins Nov. 24, '19.
Lindsay St	Academy Rd. to Kingsway	6		
Lindsay St	Kingsway to Haskins	9		
Lindsay St	Haskins to Lennox	2		
Lindsay St	South of Lennox	2	21	
Borebank St	Academy Rd. to Kingsway	3		Various portions of sewer ordered in 1913 and 1914 but not yet constructed.
Borebank St	Kingsway to Haskins	2		
Borebank St	Haskins to Jackson	1	6	
Fleet Ave	Harrow to Guelph	1		
Fleet Ave	Guelph to Wilton	2		
Fleet Ave	Nathaniel to Cambridge	3	6	
Lorette Ave	Wentworth to Stafford	3		
Lorette Ave	Stafford to Harrow	4		
Lorette Ave	Harrow to Guelph	1	8	
Scotland Ave	Guelph to Wilton	1		
Scotland Ave	Wilton to Rockwood	1		
Scotland Ave	Rockwood to Cambridge	3	5	Shacks.
Weatherdon Ave	Wentworth to Stafford	3		
Weatherdon Ave	Stafford to Harrow	2		
Weatherdon Ave	Harrow to Guelph	2	7	
Hector Ave	Aynsley to Lilac	2		
Hector Ave	Lilac to Wentworth	2		
Hector Ave	Wentworth to Stafford	2		
Hector Ave	Stafford to Harrow	1	7	
Carter Ave.*	Aynsley to Lilac	6	6	
Ebby Ave	C.N.R. Yards to Pembina Rd.	4		
Ebby Ave	Wentworth to Stafford	1	5	
Parker Ave	To C.N.R. Track	1		
Parker Ave	C.N.R. Track to Rockwood	4		
Parker Ave	Rockwood to Thurso	3		
Parker Ave	Thurso to Nathaniel	5	13	

Street	Block	Houses	Total	Remarks
Pembina Road	Scattered	5	5	
Cambridge St	Scattered	11	11	
Jubilee Ave	Lilac to Pembina Road	24	24	Tenders called for water main Nov.22, 1919. Sewer already constructed.
	Total	164		
On streets with less than 5 houses		59		
	Total	223		

WEST END

(Assiniboine Ave. to Higgins Ave.)

Dominion St	St. Matthew's to Ellice	1		
Dominion St	Yarwood to Notre Dame	4	5	
Dundas St	Portage to Ellice	4		Water main laid. Sewer ordered from Sargent to 449 ft. S. of Albert St. Oct. 14, 1919.
Dundas St	Ellice to Sargent	6		
Dundas St	Sargent to Notre Dame	1	11	
Empress St	Portage to Ellice	1		Water main laid.
Empress St	Ellice to Sargent	4	5	
Wall St	Portage to St. Matthew's	3		
Wall St	St. Matthew's to Ellice	3		
Wall St	Ellice to Sargent	2		Water main laid.
Wall St	Sargent to Wellington	1		
Wall St	Wellington to Richard	1		
Wall St	Richard to Notre Dame	2	12	
Keewatin St.*	Logan to C.P.R. Main Line	5	5	Water main laid.
Erin St*	Wellington to Richard	1		
Erin St	Richard to Notre Dame	5	6	Water main laid.
Spruce St	Ellice to Sargent	3		
Spruce St	Richard to Notre Dame	3	6	Water main laid.
Tylehurst St	Portage to Ellice	2		
Tylehurst St	Ellice to Sargent	2		
Tylehurst St	Sargent to Notre Dame	1	6	
			56	
On streets with less than 5 houses			36	
	Total		92	

WEST END

(North of C.P.R. Main Line)

Street	Block	Houses	Total	Remarks
Atlantic Ave.*	C.P.R. Beach Track to McPhillips	12		Water main laid for about 200 ft. of this.
Atlantic Ave	McPhillips to Keewatin	2	14	
Boyd Ave	Artillery to C.P.R. Beach Track	1		Sewer. No water.
Boyd Ave	Beach Track to Battery	2		
Boyd Ave	Battery to Prince	2		
Boyd Ave	Prince to McPhillips	1	6	
Burrows Ave	McPhillips to Keewatin	5	5	Water main laid to 475 ft. W. of McPhillips. No sewer.
Pritchard Ave.*	Battery to Prince	5	5	Sewer tenders to be called Dec. 8, 1919.
Kitchener	Cor. Keewatin	5	5	Dairies.
Minnegoffe St.*	Mountain to Church	6	6	
			41	
On streets with less than 5 houses			51	
Total			92	

ELMWOOD

Street	Block	Houses	Total
Herbert Ave	Foster to Green	5	
Herbert Ave	Green to Birdshill Road	5	10
Beach Ave	Grey to Cameron	5	
Beach Ave	Cameron to Figaro	1	
Beach Ave	Figaro to Birdshill Road	3	9
Sandhurst Ave	Grey to Molson Branch C.P.R	1	
Sandhurst Ave	Molson Branch to Kent	6	7
Union Ave	Kelvin to Brazier	3	
Union Ave	Watt to Green	2	5
			31
On streets with less than 5 houses			9
Total			40

SUMMARY

Fort Rouge	164
West End (Assiniboine to Higgins)	56
West End (North of C.P.R. Main Line)	41
Elmwood	31
	292
On streets with less than 5 houses	155
Total houses without plumbing	447
Total houses in City (approximately)	30,000

HOUSING

The extraordinary condition of affairs regarding building construction in every civilized country has affected Winnipeg also. The cost of building, both for labor and materials, is unprecedented and, temporarily at least, has deterred many from building houses. Certainly no money can be made here at the present time by building houses for rent.

Late in the year a start was made by the formation of a Housing Commission in order to take advantage of the money offered at 5 per cent. interest by the Dominion Government. A few houses were built and probably a much larger number will be erected in 1920, provided that the cost of building does not become prohibitive. A very large number of houses were repaired in a more or less effective fashion during the year and are now occupied. Very few of the 1480 vacant houses reported last January are still vacant.

This shortage of houses has resulted in the continued overcrowding of families into the houses previously occupied until now we have an extremely large number of families living under very undesirable conditions.

We sincerely hope that a method may be discovered by which a very large number of new houses—especially of small houses—will be provided. It would be very deplorable if the city should be compelled to resort to any system of temporary housing in huts or tents.

SHOAL LAKE WATER

In April last the Greater Winnipeg Water District completed their great undertaking and the water from Shoal Lake was turned into the city mains. The city is to be congratulated on having now an unlimited supply of soft water. The saving on the expense of maintaining boilers and plumbing in proper condition, and to the householders and laundries on soap and softening chemicals, will be enormous. Careful supervision of the purity of the water has been maintained by the Bacteriologist and the City Chemist, samples being examined daily. The temperature of the water in summer was rather a disappointment, reaching as high as 70 degrees Fahrenheit. The water is at present of extremely low temperature and is of excellent quality, both bacterially and chemically.

The Department made several inspections of the lake front near the intake and advised the officials of the Greater Winnipeg Water District as to the rules and regulations which they should put in force in order to ensure that the water be not contaminated in any way at the source, either by residents or visitors.

Health Bulletins

During the year articles were published on the following subjects: Housing, The Hotel By-law, Inspections for License Permits, Vaccination, Clean-Up Campaign, Venereal Disease Regulations, Vital Statistics, Scarlet Fever, The Influenza Epidemic, Diphtheria, Frozen Plumbing, Cancer, The Keeping of Poultry, Infantile Mortality, etc.

Educational Work

Officers of the Department have addressed various organizations of citizens on different phases of health work. We are always willing, as far as possible, to co-operate with groups of workers desirous of improving the public health, preventing the spread of disease, and the conservation of life—particularly of child life.

For the education of our staff of Sanitary Inspectors the following programme was arranged by the Committee in charge:

January 4, 1919—Lecture on "Water," by Dr. Gordon Bell, Chairman of the Manitoba Board of Health and Provincial Bacteriologist.

January 11, 1919—Hat Day (questions placed in a hat; afterwards drawn from and answered by individual members).

January 18, 1919—Visit to the Electric Power Station under the guidance of Mayor Gray.

January 25, 1919—"A Safe Water Supply." A lecture on Winnipeg's new water supply by Commissioner Waugh, Greater Winnipeg Water District.

February 1, 1919—Visit to Kinalmeaky Dairy Farm, Headingly.

February 8, 1919—Paper on "The Fly, Flea, Rat and Mosquito as Disseminators of Disease," by Mr. H. B. Weston.

February 15, 1919—Visit to Oleomargarine Plant of the Swift Canadian Company.

February 22, 1919—"Light in Relation to Health," Dr. C.M. Clare.

The season was short on account of the Influenza Epidemic in the Fall of 1918.

GENERAL COMMENT

During the year it was our privilege to welcome back a number of members of the Department who served their country overseas.

Those who returned were Dr. J. H. Leeming, Inspectors Pickering and Foggie, and Miss Attrill, Child Welfare Nurse. It is with the greatest regret that we report the loss of Messrs. Green, Saville and Rason, who gave up their lives.

Dr. W. J. Sharman, who filled Dr. Leeming's place during the latter's absence and who gave every satisfaction, resigned early in the spring to accept a position in New York.

It is with the deepest regret that we chronicle the death of Dr. E. Richardson, one of our attending physicians at the Milk Depot. Dr. Richardson had been connected with the depot ever since the city took it over. The services he rendered are not to be computed in terms of dollars and cents. It is sufficient to say that he made a reputation for professional ability and tact that will not be forgotten by his many patients and associates. Dr. C. C. Field was appointed to fill the vacancy caused by Dr. Richardson's death.

The Department sustained a severe loss during the year when Mr. P. B. Tustin, Chief of the Food and Dairy Division, resigned to accept a responsible position in England, as advisor to a large milk distributing corporation. Mr. Tustin had been with the Department some fifteen years, starting as a sub-inspector, and by his own abilities rose to be the head of a very important division.

He was, at the time he left us, one of the outstanding men in Canada in his own line and was a recognized authority in matters pertaining to food and dairying throughout the country, as his work with the Canada Food Board and other bodies gives ample evidence.

When Mr. Tustin left, Mr. Rigby was placed in charge of the Food Division, Mr. Brown in charge of the Dairy Division, and Mr. Lawrence in charge of the Babies' Milk Depot—well deserved and honorably earned promotions in each case.

During the year the old question of meat being sold which was not Government inspected came up and gave rise to considerable discussion. We hope during 1920 to see a central depot established where meat not so inspected may be brought for examination by inspectors appointed by the city. This recommendation has frequently been made in previous reports.

The question of drug addiction is one that has been brought to the attention of the Department a number of times. We would welcome a movement to further regulate this and at the same time to care for the unfortunate victims.

In conclusion I desire to express to the members of the staff my very sincere appreciation of the faithful manner in which they have discharged their duties throughout the year.

Respectfully submitted,

A. J. Douglas,
Medical Health Officer.

REPORT OF THE DIVISION OF SANITARY INSPECTIONS AND HOUSING

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir: I have the honor to submit herewith reports of the work accomplished in those branches of the Department under my control as set forth in the reports of the Assistant Chief Health Inspector, the Inspector of Tenements and the Smoke Inspector, all of whom are under my supervision. I also submit the Scavenging Report for the year.

Respectfully submitted.

J. H. Pearson,
Chief Health Inspector.

REPORT OF ASSISTANT CHIEF HEALTH INSPECTOR

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir: I submit herewith report of work done by and records of the Division of Sanitary Inspections and Housing for the year 1919.

Abatement of Nuisances

The table immediately following presents in tabular form a complete and concise report of the work of the Inspectors of this division for the year. The total number of inspections was 37,714. In addition to making such inspections, the inspectors devoted a considerable portion of each day to the supervision of the work of the scavenging teams.

The total defects discovered were 17,332. This includes 2,764 plumbing defects. Scavenging complaints numbered 4,468 and nuisance complaints 2,540.

SANITARY INSPECTIONS FOR THE YEAR 1919

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Complaints received in office	499	376	528	677	452	178	741	723	550	482	505	474	6185
Complaints made to Inspector	74	50	48	49	94	56	94	79	75	82	54	68	823
Total	573	426	576	726	546	234	835	802	625	564	559	542	7008
Of above—													
Complaints re non-removal of garbage, etc.	321	233	377	514	348	69	533	524	391	354	422	382	4468
Complaints re nuisances, etc.	252	193	199	212	198	165	302	278	234	210	137	160	2540
Total	573	426	576	726	546	234	835	802	625	564	559	542	7008
Complaints well founded	506	385	514	623	462	200	746	653	468	471	460	472	5960
Complaints unfounded or rectified previous to receipt of same	67	41	62	103	84	34	89	149	157	93	99	70	1048
Total	573	426	576	726	546	234	835	802	625	564	559	542	7008
Written notices (informal)	85	69	95	168	115	52	134	155	139	94	131	127	1364
Written notices (statutory)	124	113	148	225	133	15	173	149	138	167	113	125	1623
Verbal notices or warnings	574	636	709	774	1283	676	820	842	952	755	625	731	9377
Total	783	818	952	1167	1531	743	1127	1146	1229	1016	869	983	12364
Inspections Made:													
Dwelling houses	1342	256	346	195	227	135	304	313	437	308	268	576	4707
Tenement and apartment blocks	56	89	90	56	140	71	64	60	62	223	77	93	1081
Hotels and lodging houses	37	31	49	65	48	27	42	64	63	48	36	64	574
Schools and public buildings	6	9	8	8	8	5	5	13	4	7	7	8	88
Abattoirs	4	2	3	.	1	..	3	2	2	..	2	2	21

SANITARY INSPECTIONS FOR THE YEAR 1919—Continued

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Workshops and factories	44	32	33	24	32	22	32	28	34	26	41	44	392
Offices	13	3	10	17	10	4	8	11	8	8	16	10	118
Restaurants and stores	67	87	67	57	75	44	64	49	48	39	33	102	732
Livery, feed and sale stables	35	21	24	22	29	23	30	20	18	20	14	13	269
Private stables	114	100	146	100	127	46	140	146	186	217	113	155	1590
Laundries, hand	57	54	70	145	123	97	107	58	58	58	61	85	973
Laundries, steam	8	4	6	24	2	2	6	3	5	4	5	5	74
Dog kennels	2	3	2	9	8	5	4	5	5	4	4	3	54
Theatres and places of amusement	7	4	4	5	1		1	3	3	1	5	3	37
Public bath houses	8	6	8	8	6	4	8	8	8	8	8	8	88
Public bath houses, water samples		4	4	5	3	9		2	4	4	3	4	42
Public comfort stations	24	15	14	12	9	1	21	20	18	11	20	18	183
Maternity and Infants' Homes		3	2	5	4		5	2	1	2	2		26
Private hospitals	2				2			1	1	1		1	8
Common drinking cups and towels	12	5	10	8	7	8	8	6	8	9	12	6	99
Barber shops	16	26	48	30	14	11	17	14	20	23	21	21	261
Second-hand stores and junk yards	39	26	24	87	108	29	50	23	23	18	13	69	509
Pool rooms	29	21	37	62	29	34	30	36	24	22	22	23	369
Yards, sheds, areas, etc.	681	514	732	733	1431	885	1072	1140	1497	1126	1192	1192	12019
Vacant lots (nuisances)	35	45	67	81	69	35	85	45	42	45	23	22	594
Streets and lanes (nuisances)	186	143	135	138	68	83	136	126	137	153	152	206	1663
Re infectious diseases (Houses placarded, disinfected, etc.)	253	1		1			1	2					258
Total number of inspections	3077	1504	1939	1897	2581	1580	2243	2200	2716	2385	1974	2733	26829
Re-inspections	775	849	899	892	806	460	1086	982	967	1118	1038	1013	10885
Total number of inspections and re-inspections	3852	2353	2838	2789	3387	2040	3329	3182	3683	3503	3012	3746	37714

DEFECTS AND NUISANCES DISCOVERED AND ABATED

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Defective or choked drains	24	21	44	28	27	19	36	25	45	35	25	21	350
Defective or choked sinks and wash-basins	31	41	24	53	30	10	30	25	34	31	29	31	372
Defective or choked water-closets and fittings	58	44	60	86	43	23	54	51	42	53	60	52	626
Defective or choked baths and fittings	3	4	5	6	5	2	3	5	2	5	9	3	52
Defective or choked urinals and fittings	7	6	11	23	5	1	7	7	7	8	5	1	88
Defective or choked soil pipes, clean-outs, etc	9	6	21	18	3	1	9	9	20	9	10	12	127
Defective or choked catch-basins and traps	12	10	24	21	27	13	28	19	38	25	11	18	246
Defective light and ventilation W.C. compartments	2	5	21	18	4		7	12	15	6	3	5	98
Frozen plumbing and water pipes	54	89	85	15						3	21	89	356
Frozen vent stacks	....	3	1									10	14
Frozen sewer connections	1		2	1								2	6
Water services defective or cut off	31	28	42	32	27	14	23	20	23	16	19	43	318
Insufficient plumbing fixtures	3	7	9	12	5	1	6	9	5	3	2	6	68
Notified to instal new plumbing	4	4	4	6	1		3	5	8	4	2	2	43
Total plumbing defects	239	208	353	319	177	84	206	187	239	201	196	295	2764
Dirty yards, courts, sheds, etc	254	262	340	502	1059	455	514	594	614	443	324	401	5762
Keeping fowls in dwelling	13	11	9	6	4	3	5	12	14	22	19	10	128
Keeping pigeons in dwelling	5	4	2	4	2	1	2	4		2	4	1	31
Keeping other animals in dwelling	3	2	2		5	1		1	2	6	6		28
Cows too close to dwelling	6	2	7	6	7	2	17	7	12	9	8	2	85
Hogs, unlawfully keeping							3				1		4
Garbage receptacles	70	74	107	139	148	116	268	285	215	190	82	163	1857
Refuse receptacles	92	55	81	83	213	89	83	106	88	101	65	94	1150
Manure receptacles	32	38	47	67	47	22	74	49	43	37	54	54	564

DEFECTS AND NUISANCES DISCOVERED AND ABATED—Continued

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Ash receptacles	29	16	29	9	23	5	27	11	12	21	33	51	266
Paper receptacles	12	21	17	13	22	31	25	19	16	16	14	17	223
Slop cribs (winter)		4											4
Defective cellars and basements (walls, floors, drainage, windows, etc.)	37	31	55	63	40	19	92	68	74	48	10	25	562
Dilapidated and insanitary dwellings (walls, ceilings, floors, etc.)	31	5	20	24	16	2	31	18	48	21	7	24	247
Dilapidated and insanitary tenements	1		4	10			2	2	1	2	5	1	28
Dilapidated and insanitary offices and workshops	8		2		2	1			2	1			16
Dilapidated and insanitary other buildings (stables, sheds, etc.)	11	4	12	20	19	6	40	15	29	24	14	14	208
Overcrowding (day inspections)	46	95	80	20	50	8	5	36	15	21	27	49	452
Overcrowding (night inspections)	30	58	71	18							37	21	235
Overcrowding (notices)	12	38	39	5	2			7	2	2	17	21	145
Defective chimneys	10	5	4	9	5	3	7	4	4	6	7	2	66
Defective roofs	1	3	18	23	4	5	24	14	15	12	5	1	125
Defective eavetroughs and rain-water leaders		4	2	11	11	1	15	9	14	14	2	2	85
Defective gas fixtures and piping	2	2	3	3	2						2	8	22
Defective furnaces and heating apparatus	7	10	13	8	5	1	2	7	10	20	14	13	110
Defective refrigerators													
Defective lighting	4	5	39	43	5	1	7	2	5	7	10	3	131
Defective ventilation	9	10	25	20	6	1	4	8	8	11	11	2	115
Notices to build, repair, clean or remove brick pit closets	1	1	2	5	2	2	4		2	7	3	5	34
Notices re contractors' closets			4	7	1		9	10	10	23	20	9	93
Notices re chemical or patent closets			1	1						2		1	5

Stagnant water, vacant lots			3	30	4		2	2	3			12	56
Other nuisances, vacant lots	25	46	36	59	36	35	39	44	36	32	21	21	430
Nuisances on lanes or streets	135	154	132	130	76	52	115	99	100	95	124	89	1301
Total	886	960	1206	1338	1816	862	1416	1433	1394	1195	946	1116	14568
Plumbing defects	239	268	353	319	177	84	206	187	239	201	196	295	2764
Total defects discovered (including plumbing defects)	1125	1228	1559	1657	1993	946	1622	1620	1633	1396	1142	1411	17332
Smoke Nuisances													
Observations of chimneys and smokestacks	37	11	12	9	11	5	11	13	22	11	20	31	193
Inspections of furnaces, boilers, fuels, etc	47	21	31	25	21	11	23	19	35	25	43	58	359
Total	84	32	43	34	32	16	34	32	57	36	63	89	552
Notices, statutory	2	1	1		...		1	4	1	1	2	...	13
Notices, verbal	11	8	8	7	5	3	7	8	10	9	13	13	102
Total	13	9	9	7	5	3	8	12	11	10	15	13	115
Miscellaneous													
Milk samples taken	...	.	...	...	...		...	.	.	...	..	...	.
Water samples taken													
Chemical tests (plumbing and drainage), positive	1		2	1	2	1	2		1		1		11
Chemical tests (plumbing and drainage) negative	4	2	8	4	2	1	2	2	4	4	1	1	35
Cases reported for prosecution	3	3	2	5			5			5	8	..	31
Time attending court (hours)	..	5		4			3½	2½	.	3	5½	1	24½

Frozen Plumbing and Water Pipes

There were 356 notices regarding frozen plumbing and water pipes served, an increase of 78 over 1918. The months of October, November and December show an increase from 14 in 1918 to 113 in 1919. This was no doubt partially due to the unusually cold weather in October and November, but was also due to the fact that a great many old and dilapidated houses were repaired and occupied during the year. Frozen vent stacks, 14, and frozen sewer connections, 6. In connection with the occupation of dilapidated houses, there are a large number of houses which, whilst fit for summer occupation, are of such poor construction that it is impossible to keep the plumbing and water pipes from freezing during the winter. It has been quite a frequent practice for owners and agents of such houses, on receipt of a notice from the Health Department during the winter, requiring them to thaw out the plumbing or to take adequate steps to prevent further freezing, to ask the Department to serve closing notices on the tenants on the ground that it was impossible to comply with such notices. When houses were plentiful the Department sometimes adopted this course, but now that houses are so scarce, we shall have to decline to do this, and to insist on compliance with the terms of the notices. Why should a tenant be forced to vacate his house in the middle of winter after paying rent for the house all summer and having rented such house in the belief that it was in such condition as to be habitable all the year round? Some tenants who do not understand anything about building construction are foolish enough to sign leases binding them to do very unreasonable things, including compliance with all Health Department notices and the keeping of the plumbing and water pipes from freezing under all circumstances. How can a tenant do this in houses with dug-out cellars exposed to frost and cold air coming in through the defective foundations? The Department will not recognize such leases and the police magistrate has also ruled that nothing in any such leases can excuse the owners from performing any duties imposed on them by the Public Health Act. We still have a good deal of trouble with frozen plumbing in lock-up stores heated by stoves and where the tenants do not maintain sufficient heat at night and over Sundays. Five hundred and sixty-two notices were served respecting defective cellars or basements, and a good many of the oldfashioned wooden cellars were re-built to comply with the Public Health Act, or else filled in.

OTHER PLUMBING DEFECTS

Of the 2,764 plumbing defects discovered, 1,861 were due to defective or choked drains, sinks, baths, washbasins, W.C.'s or other fittings. Ninety-eight water closet apartments were found to be either without windows, or with defective lighting. At 318 premises the water service was reported to be either defective or turned off. Sixty-eight complaints were made of insufficient number of plumbing fixtures and only 43 persons were notified to instal plumbing in a building for the first time. Very few new sewers or water mains were constructed or this number would have been larger.

DEFECTIVE GAS FIXTURES, PIPING OR MAINS

Only twenty-two such complaints were received and fortunately none of them very serious. Most of them related to defective gas stoves or stoves not properly connected to flues. It is highly important that all gas fitters be licensed, all gas fitting be done under permit, and inspection made after the work is done. Especially since housing accommodation became so scarce we find large numbers of gas stoves installed without any hoods or pipes and in many instances these stoves are installed in small rooms which are also occupied as bedrooms. Where, as is often the case, there are several of such gas stoves installed in one house, the air must become seriously vitiated, especially in winter when all doors and windows are kept closed as much as possible.

GARBAGE, MANURE OR OTHER RECEPTACLES

The following notices were served:

To provide garbage cans	1,857
To provide receptacles for incombustible refuse	1,150
To provide new manure bins or to repair old ones	564
To provide ash receptacles	266
To provide boxes for waste paper	223
Total	4,060

The garbage cans supplied by the Department now cost $2.75. Many of the garbage cans used by householders and bought elsewhere, are too flimsy and require renewing too often. Manure bins are required to be fly-proof. Ash bins are not compulsory but are a good investment for those who desire to have their ashes removed during the winter months.

Contractors' Closets

The amount of building being small, only 66 permits for contractors' closets were issued. Ninety-three notices were served in respect of such closets. Many contractors are very careless in the way they construct and maintain such closets.

Livery, Feed and Sale Stables

Twenty-six permits were issued. Two hundred and sixty-nine inspections were made of such stables.

Private Stables

Fifteen hundred and ninety inspections of private stables were made and 452 notices served for improvements such as concrete floors, fly screens, limewashing, fly-proof manure bins. Seventeen persons were prosecuted for permitting insanitary conditions in or about their stables.

Keeping of Animals

During the year the Department dealt with the following instances regarding the keeping of animals:

Poultry—	
Keeping fowls in dwelling or in sheds attached to dwelling	128
Keeping pigeons in dwelling or in sheds attached to dwelling	31
Total	159
Keeping other animals in dwelling (mostly dogs, but two pigs were found)	28
Larger Animals—	
Keeping cows in sheds or stables too close to dwelling	85
Keeping cows in dilapidated sheds or stables	39
Keeping of cattle other than cows	24
Keeping of horses	95
Keeping of goats	6
Keeping of hogs	12
Total	261

These 261 animals were kept in 117 different sheds or stables. Action was taken and resulted as follows:

Cows removed	86
Calves removed	18
Steers removed	7
Goats removed	6
Pigs removed	12
Horses removed	40
Total	169

Of the stables and sheds—

Vacated and placarded	29
Vacated but not placarded	41
Number of animals kept reduced, in	10
Stables demolished	2
Improved	21
Extension of time given on receipt of guarantee	14
Total	117

It is very difficult to impress on some citizens that if they wish to keep cows it is necessary that they provide a properly constructed stable. There are a large number of persons who keep cows out on the prairie during the summer but in the fall these cows are brought in and placed in any old shed which comes handy. Many try to keep more than one cow and in such cases almost invariably sell milk without license. If it were not for the restrictive action of the Health By-law we should have in some districts a very large number of cows kept under very undesirable conditions.

As regards poultry, we have had a number of complaints that poultry are kept too close to adjacent houses other than those of the owner of the birds. The by-law does not specify any minimum distance which poultry sheds and runs shall be from dwellings. A by-law to better regulate the keeping of poultry is being prepared.

Dog Kennels

Sixteen permits were issued, an increase of 7 over 1918. Fifty-four inspections were made.

NUISANCES IN YARDS, SHEDS, LANES, VACANT LOTS, ETC.

Dirty yards, courts, sheds, etc	5,762
Stagnant water on lots	56
Other nuisances, vacant lots	430
Nuisances on lanes or streets	1,301
Total	7,549

This part of the inspectors' work is important and the large number of nuisances disclosed shows the necessity for constant patrol of the City.

MANURE ON WAR GARDENS AND VACANT LOTS

As forecast in last year's report, the Health Committee took steps to curtail the privilege of depositing manure on gardens during the winter. This privilege, originating as a war measure, had been abused. The special circular issued by the committee on the subject prohibits the depositing of any manure unless dug in within 48 hours. Plenty of manure can be got in the spring after the frost is out of the ground sufficiently to permit of digging.

COMPULSORY SEWER NOTICES

Only one such notice served during the year. This was asked for by the owner in order to assist him in installing plumbing.

APPLICATIONS FOR CITY-INSTALLED PLUMBING

Only two persons made application for such assistance. The applications were granted in both instances.

OVERCROWDING

There were 452 day inspections and 235 night inspections made respecting overcrowding, and 145 notices to abate overcrowding served. There were no prosecutions. The overcrowding referred to here is what is known as room overcrowding—mostly caused by taking in boarders—and does not take into account the deplorable overcrowding of several families into dwelling houses intended for occupation by one family only. This phase of the question is more fully dealt with under the heading of housing.

HOUSING

No improvement in housing conditions can be reported. The population has largely increased, due to natural increase and also the return of many soldiers and their families. Owing to the shortage of houses a special committee of the City Council was formed and two or three large buildings fitted up for rental in suites to small families. The City Council also permitted the fourth floors of a number of central blocks as an emergency measure. The crowding of families into single family houses has continued and such was the situation that this department is not in a position to prevent such unlawful occupation. Only 87 new dwellings were erected during the year; there were no apartment blocks.

Many of these new dwellings were not completed by the end of the year, as the strike and other unsettled conditions prevented an early start. Many old houses were repaired in a more or less thorough manner and occupied. The vacant house survey of January, 1919, showed 1,480 vacant houses. In December we took another such survey and found that there were only 499 vacant houses. Only 288 of the 1,480 houses listed as vacant in January were still vacant in December, so that 1,192 of the houses vacant in January had been repaired and put into occupation. Many of these houses are very old and very cold, in fact it takes a good deal of care on the part of the tenants and an excess of fuel to keep such houses warm enough to live in. If there were a surplus of small comfortable houses, the kind under discussion would not remain occupied in winter. As stated above, of the 499 houses noted as vacant during December, 288 appeared on the January list and have presumably been empty during the whole year. Possibly a number of the remaining 211 houses will be repaired in the near future. A good many of the houses are, however, tied up in litigation caused by the war and this renders it difficult to get any person to take the responsibility of ordering repairs.

ACTION UNDER DOMINION GOVERNMENT SCHEME

At the meeting called by the Provincial Government in the Parliament Buildings in November, 1918, and at the various public meetings held in the City Hall, there was always a strong representation of builders, builders' supply agents, real estate men and others. These gentlemen, whilst desirous of seeing building done by means of the Dominion Government loan, developed a marked antipathy to anything being done which would divert such building operations from the ordinary channels of trade. Any schemes by which the City would undertake to reduce the cost of building, by building a large number of houses—possibly by day labor—were not favorably considered. Other citizens, representing social workers who desire to see better housing conditions, were present, but as they are not, as a rule, persons with a specific knowledge of building, the views of the former class prevailed. The Architects' Association assisted to the extent of providing a set of admirable plans, which, however, proved too expensive for consideration as part of a housing scheme.

The Provincial Government, in drawing up the Act by which this province is to participate in the scheme, provided that they would loan only to municipalities, although the Dominion Government regulations expressly provide that monies may be loaned direct to housing companies formed to promote good housing and not for purposes of gain. This made it impossible for the Housing Commission, promoted by the Board of Trade, to borrow money direct from the Government. The province thus avoided all possibility of loss to itself, and the city also avoided risk by requiring the subsidiary company, formed for that purpose, to put up a margin of 15 per cent. This, with the 15 per cent demanded from the applicants for loans, made the matter fairly safe as far as the city was concerned.

A start was made in building houses for individual owners, but we are now told that the cost of building materials has again soared 30 per cent. since November, 1919, and that further operations are barred because it is no longer possible to build houses at a price within the maximum limit set by the Dominion Government Regulations.

Cost.—The cost of building materials of all kinds, plumbing fixtures and building hardware, are now to be investigated by the Board of Commerce, which has made an order declaring such commodities to be necessaries of life, and further ordering all dealers in Canada to deliver to the Secretary of the Board, by March 31st, 1920, a statement showing the cost price to them of each article or class of building material, and also their selling price thereof to a contractor or individual for use in the building of houses. If such evidence discloses an unfair profit, such dealers will be liable to prosecution for an offence under the Combines and Fair Prices Act of 1919. Comment on the above order, by dealers in Eastern Canada, shows the usual disavowal of any undue profits. One dealer says (referring to plumbing materials): "There is little or no material in the market at present to be bought. All stocks are going down, and nothing, of some lines, is being manufactured." Whilst much enquiry is desirable, it is to be feared that not much reduction of prices may be expected as a result of the same.

There does not seem to be much hope of many houses being built by private enterprise, at the present high prices; certainly not of small houses intended for rental. If fully modern, they cannot be built at a price which will permit of their being rented at such a rent as workingmen are able to pay.

Amendment of Act.—If the Provincial Government could be induced to amend the Act of last session so as to permit of loans direct to housing companies, something might then be done by groups of persons desirous of building houses.

Co-operation.—It is in some form of group co-operation and by building a large number of houses at one time and in one place that any hope of material reduction of cost lies. The land should be bought wholesale as well as the materials. If such a scheme is undertaken by the city, so much the better. If nothing is done to facilitate the erection of houses within the city, the effect will be that such building as is done will be done in the surrounding municipalities where land in cheaper and restrictions fewer.

Should We Reduce Standards—It should be remembered that our building standards are not very high and in many respects we need a higher rather than a lower standard. We must insist on: Adequate spaces round each house to permit of proper lighting and ventilation; reasonable size of rooms. (In one of the new houses built by the Housing Commission we find that the two bedrooms contain only 495 and 528 cubic feet respectively. As the law requires a cubic air space of 400 cubic feet for each adult and 200 for each child, under 12 years of age, it is evident that two adults may not occupy either of these bedrooms. There is not even room for one adult and one child in each). A minimum standard of warmth in construction should be agreed upon and enforced. We would suggest that all plans for dwellings should be approved by the Health Department as regards lighting, ventilation, plumbing, etc., before permit is issued and also before occupancy.

On the other hand, would it not be possible to reduce the standard by permitting in a larger area than at present, the construction of houses without full basements. It is submitted that in this emergency a considerable proportion of the cost of a house could be saved by constructing semi-modern houses on a solid surface foundation of concrete especially well constructed. The concrete foundation should only be 6 or 8 inches above the ground so as to avoid a cold space under the house. Cellars might be omitted altogether, or only small concrete cellars about 10 feet x 10 feet built. Furnaces would not be required. The houses might be banked up in winter. There are hundreds of working men who would prefer to heat their cottages with stoves rather than have the extra expense of operating a furnace. In small houses covering a small area of ground, it is submitted that, with proper construction of the concrete sills and extra warm construction of the house, double floor with insulation between, protection of water pipes, etc., such houses would be quite sanitary, comfortable and fairly durable.

An Industrial Workers' Suburb.—If a large plot of land is purchased, the whole scheme carefully planned, the erection supervised properly by a competent architect, the houses arranged in terraces, group houses, and single dwellings, the street and boulevard features made attractive, and restrictions enacted preventing the encroachment of business premises and industries, such a locality might be made very attractive and desirable and thus a good investment. If any saving is to be made at this time, it must surely be in either the cost of the land, the erection of a large number of houses at one time, or the cutting out of all features not an absolute necessity.

Apartments.—Something might be done by the erection of a few apartment blocks or tenements, of plain construction and containing numerous small suites. Many families could manage nicely with one living room, one roomy bedroom, a bathroom and a kitchenette off the living room. For larger families, two bedrooms should be provided.

We need more houses—a very large number—

(*a*) To take care of the natural increase of population.

(*b*) To permit of the further growth and development of the city and to provide housing accommodation for the families of workers who will be needed in new industries. The city is bound to grow and this rapidly. Shortage of houses will handicap this growth, however.

(*c*) Lastly, but of even greater importance, we need a very large number of houses in order that proper accommodation may be found for the large number of families now grouped together in single family dwellings. Until this is done our housing laws cannot be enforced and conditions will get worse.

There are persons who appear to think that so long as no families are as yet compelled to live in tents and outhouses that there is no housing shortage. This is a very short-sighted view of the problem, especially in view of the conditions disclosed by our housing survey of 1918.

The whole situation is, owing to the causes enumerated above, fraught with difficulties. The matter of housing is, however, so important and so vital to the health, contentment and general well-being of the community, as well as to the future growth and development of the city, that we feel sure the matter will not be allowed to drop.

Trades, Manufactories, Office Buildings, Etc.

Although the duty of enforcing proper sanitary conditions in factories and workshops is imposed on the Bureau of Labor of the Provincial Government, complaint is frequently made direct to this department. We made 531 inspections of such buildings and of offices. The complaints were mostly of lack of adequate plumbing, want of cleanliness in the premises, lack of sufficient natural light, poor ventilation, or of overcrowding. Three applications to establish or to improve tanneries were made. A chemical works for manufacturing muriatic acid by heating salt and adding sulphuric acid was found to be a nuisance owing to defective apparatus. Offensive fumes were emitted. The premises were located only ten inches from the nearest dwelling. As the plant has been established without permission of Council, as required by the Public Health Act, no difficulty was experienced in inducing the proprietors to remove to a more suitable location.

RATS

The Department distributed, free of charge, 1,038 boxes of Extirmo, and also paid a bounty of five cents on 14,960 rats' tails at a total cost of $748.00.

When shall we get a Charter amendment and by-law recognizing the responsibility of the owners of buildings for harboring rats and requiring that proper means be taken to render buildings rat-proof?

RAGS

No complaints were received this year of violation of the regulations of the Provincial Board of Health.

PUBLIC BATHS AND COMFORT STATIONS

Our inspectors made 88 inspections of the public baths and took 42 samples of the water from the swimming pools for bacteriological examination. Also 183 inspections of the public comfort stations. Conditions were found in all cases to be good. There are still only two public baths, viz., Cornish Street and Charles Street. A few more in other parts of the city would be very desirable from a health standpoint.

MATERNITY AND INFANTS' HOMES

Four maternity and five infants' homes were registered. Twenty-six inspections were made by our inspectors and 39 visits by the Child Welfare Nurses.

DRINKING FOUNTAINS

The side-throw jet fountain continues to find favor and many firms and institutions have installed this new type of sanitary drinking fountain. There are, however, still too many of the objectionable vertical jet fountains in use.

COMMON CUPS AND TOWELS

Ninety-nine inspections were made and notices served when it was found that the regulations of the Provincial Board of Health were being infringed.

CHIMNEYS AND FURNACES

Defective chimneys, 66, and defective furnaces and heating apparatus, 110, were inspected and dealt with as the circumstances warranted. With the substitution of soft coal for the hard coal formerly used, chimneys require more frequent sweeping, and often when complaints are made of smoke and gas escaping into the house, we find that dirty chimneys or pipes are largely the cause. Complaints of lack of sufficient heat are frequent. There is no legislation compelling owners of apartment blocks to supply heat or specifying any minimum standard of heat required.

Pool Rooms

License permits issued, 75. Inspections, 369. Permit of the Health Officer is not issued unless the lighting, ventilation, cleanliness and plumbing fixtures are satisfactory.

Second-Hand Dealers and Junk Yards

Permits issued, 143, an increase of 14 over 1918. Inspections, 509. We have trouble with many of these stores in winter because the proprietors try to get along without plumbing fixtures. They have the water cut off or else allow it to freeze rather than provide heat at nights and over week-ends.

Vermin

We had about the usual number of complaints regarding buildings being infested with cockroaches or bedbugs. There is no specific legislation dealing with these pests, although there should be such. We are consequently compelled to fall back on the general provisions of the Public Health Act, and to deal with them as involving "a want of cleanliness" in the premises.

Screen Doors and Windows

There is no specific legislation compelling the use of screen doors and windows in dwellings. At the last session of the Legislature, the City Council, at the instance of the Social Welfare Commission, asked for a Charter amendment requiring owners of dwellings to provide screen doors and windows in summer. Notwithstanding the evidence submitted by the Social Welfare Commission, through its officers, of the necessity for providing such structural conveniences if sick persons, particularly children, are to be properly looked after, the amendment was refused. This is rather strange in view of the fact that we had little difficulty in obtaining legislation requiring the provision of screen doors and windows in stables, laundries and places where food is kept or prepared for sale.

BARBER SHOPS

Inspections, 261. The barbers themselves were instrumental in obtaining the passage of "The Barbers' Act" last March. The Act, however, does not deal with the sanitary conditions of barber shops or the technique of sterilization, but simply provides for the licensing of barbers and for examination of candidates. It is questionable whether the regulations of the Provincial Board of Health, made under the old Public Health Act, repealed in 1911, are still in force. In any event they are rather impracticable in parts and have never been enforced strictly, largely because there was no provision made for the appointment of one or more inspectors to do this work. New regulations are needed and also means of enforcement of the same after promulgation. At present the public have little protection from the risk of infection through the carelessness or ignorance of operators. The arrangements in some shops are very primitive and in others more pretentious, carelessness exists.

MOVING PICTURE THEATRES

Only 37 inspections were made during the year.

PRIVATE SCHOOLS

Inspections, 88. There are no provisions in the Public Health Act regarding the proper construction and maintenance of schools. It would be well if such legislation were introduced, as we should then have a standard by which to judge such institutions. Such regulations should deal with: The deposit and approval of plans, open spaces round the schools, play-grounds, fireproofness, the use of basement rooms, height of rooms, lighting, both natural and artificial, including the proper arrangement of windows, color of walls, ventilation, plumbing fixtures and sanitary arrangements, cleanliness, floor space per pupil, cubic space per pupil, furniture, temperature, humidity, regular inspection, etc., etc.

LAUNDRIES

We issued 130 permits of the Health Officer for laundries; 973 inspections were made of hand laundries and 74 of steam laundries. Many improvements were made. A number of the Chinese laundries are now installing laundry machinery.

HOTELS

In February the City Council passed the Hotel By-law (No. 9800) requiring the licensing of all hotels. The definition of "hotel" under the by-law is "any inn, tavern, public house, or other place of refreshment containing not less than twenty-four bedrooms, whether furnished or unfurnished."

Section 28 provides further that the 24 bedrooms must be in excess of those needed for the use of the family of the hotel keeper. The most important sections of the Act from our point of view is the requirement of section 7, that before any license is issued a certificate must be obtained from the Health Officer "that the premises in which it is proposed to carry on such business are suitable and satisfactory for their purpose, and that they do not contravene any statute or regulation of the Province of Manitoba or any City of Winnipeg by-laws or regulations governing the same." The by-law is to be administered by the License Department and frequent inspections are provided for.

Hotels had not previously been inspected by the Health Department except on complaint, because under the old Liquor License By-law they were under the supervision of the Provincial Government.

The wording of the new by-law, however, made it incumbent on this department to immediately proceed to make a thorough inspection and report on every hotel in the city. Such inspections were made by one officer from this division and one from the Food Inspections Division.

This involved not only the first thorough inspection of each hotel, and the preparing and service of specifications of the work required to be done in order to render the premises satisfactory, but also many reinspections. In fact, 574 inspections were made of 54 hotels. The first reports showed that many hotels had been allowed to get into a poor condition as indicated by the following table:

SUMMARY OF CONDITIONS FOUND IN HOTELS ON FIRST INSPECTION BY HEALTH DEPARTMENT

Total hotels inspected	54

Rooms—

Total rooms		3,507
Rooms used for family or help		395
Rooms for guests		3,112
Dark rooms	179	
Semi-dark	124	
Total dark or semi-dark	303	303
Net rooms for guests		2,809

Average Condition of Bedrooms (by Hotels):

Bad	1
Poor	12
Fair	22
Good	19
	54

Condition of Cellars:

Filthy	27
Dirty	6
Poor	8
Fair	9
Good	4
	54

Condition of Kitchens, Dining Rooms, etc.:

Filthy	11
Dirty	9
Poor	7
Fair	9
Good	18
	54

Condition of Plumbing and Lavatory Compartments:

Filthy and in bad repair	5
Filthy	13
Dirty and in bad repair	3
Dirty	1

Poor and in bad repair	2
Poor	8
Fair but in bad repair	1
Fair	7
Good	14
	54

N.B.—The public lavatories, or those in use for bars or pool rooms, were generally in a filthy condition. Those in use for bedrooms were generally fair.

General Condition:

REPAIR

Bad	7
Poor	10
Fair	20
Good	17
	54

CLEANLINESS

Filthy	3
Bad	1
Poor	13
Fair	22
Good	15
	54

Conditions were gradually improved throughout the year until we were able to give certificates as required by the by-law.

The insanitary condition found most difficult to overcome was the providing of natural light for the dark or semi-dark rooms. Some of these rooms had been made dark by the erection of buildings immediately adjoining, but other rooms appear to have been deliberately designed without windows. One instance of a modern hotel erected about 12 years ago is worth special note. There are bedrooms on five floors, one hundred in all; twenty of these rooms are without any window opening to the outside air. The windows open into wooden shafts or tubes only four feet square and covered at the top. In addition to this, twenty bedrooms have their windows opening on to narrow triangular indentations in a wall built to the lot line. Already the erection of an adjoining building has cut off the light from the windows on the two lower floors, making eight more rooms without proper light, or twenty-eight in all. If the adjoining building is ever carried to the same height as the hotel there will be twelve more dark rooms to add to this list. The Department refused to issue a certificate allowing the dark rooms to be occupied, unless structural alterations were made which would provide adequate natural light for these rooms. At present the hotel is being operated and the dark rooms are still used under an understanding with the License Committee that extensive alterations will be made before the license is renewed in June, 1920. Another hotel had 41 dark rooms out of a total of 54.

Of the total number of 303 dark or semi-dark bedrooms, 185 were subsequently improved to such an extent that we were able to permit of their continued use as sleeping rooms. An extension of time until spring was granted by the License Committee in the case of 47 rooms, and the use of 118 rooms was prohibited for sleeping purposes. Thirty-six hotels out of 54 had a greater or less number of dark rooms.

PROSECUTIONS

There were only 87 prosecutions as against 99 in 1918. This is the smallest number of prosecutions for many years. This avoidance of the police court is only accomplished by means of a good deal of extra work on the part of inspectors who frequently spend considerable time in trying to induce persons to comply with the terms of the notices served upon them. Sometimes we feel that this forbearance is carried to extremes.

Nature of Charges:

Neglect to properly construct, drain and ventilate stable	17
Deposit refuse or manure	8
Neglect to comply with notice of Health Officer	7
Nuisance on premises	8
Obstruct Inspector	3
Occupy insanitary premises without permission	3
Breach of quarantine regulations	3
Keep hogs unlawfully	3
Unlawful occupation as tenement	1
Permitting use of cellar for living purposes	1
Food prosecutions	13
Dairy prosecutions	20
	87

How disposed of:

	Total	Fines	Costs	Total
Cases withdrawn	2			
Cases dismissed	4			
Convicted and reprimanded	1			
Summons not served	1			
Cost of court	13		$30.55	$30.55
$1.00 and costs	4	$4.00	9.40	13.40
2.00 and costs	3	6.00	7.05	13.05
5.00 and costs	28	140.00	67.30	207.30
10.00 and costs	23	230.00	57.05	287.05
15.00 and costs	1	15.00	2.35	17.35
20.00 and costs	2	40.00	4.70	44.70
25.00 and costs	3	75.00	20.30	95.30
50.00 and costs	2	100.00	4.70	104.70
	87	$610.00	$203.40	$813.40

INSANITARY BUILDINGS

The table given below shows the number and class of premises for which notices were served upon owners and occupiers under Section 103 of the Public Health Act, under which section the Health Officer has power to require that premises be put into proper sanitary condition or else closed up.

Dwelling houses, general insanitary condition	25
Dwelling houses, unlawful conversion of same to duplex dwellings	1
Dwelling houses, unlawful conversion of same to tenements	10
Tenement houses	8
Basement and cellar dwellings	5
Dark rooms (dwellings)	4
Stores	28
Factories and workshops	9
Stables	37
Total	127
Notices served on owners and agents	88
Notices served on occupants	101

Results:

Notices complied with (premises put into sanitary condition)	73
Premises closed and placarded "insanitary"	47
Cases still pending	7
	127
Premises remaining closed on December 31st, 1918	278
Premises repaired or demolished during 1919	68
	210
Premises closed during 1919 (dwellings, 10; stables, 31; other premises, 6)	47
Remaining closed on December 31st, 1919	257

Although the records show that closing notices were served for 127 premises as against only 109 in 1918, the principal increase was in the number of notices served for dilapidated sheds or stables used for the keeping of animals from 8 in 1918 to 37 this year. Thirty-one of these were closed and placarded. The Department, owing to the great shortage of houses, was compelled to be chary in serving closing notices for dwellings or dwellings unlawfully occupied as tenements. We have on file a large number of such places where, owing to the unprecedented conditions, we can take no action for the present.

GENERAL

The officers of this division were the same as for last year, except that Inspectors Pickering and Foggie returned from active service in the fall and again took up their duties. This gives us a staff of full strength with 15 sub-inspectors and 2 clerks, besides the Assistant Chief, Deputy Assistant and Smoke Inspector and the Tenement Inspector.

The officers of this division take much interest in their work and the esprit de corps is excellent.

Yours obediently,

ERNEST W. J. HAGUE,
Assistant Chief Health Inspector.

REPORT OF THE SCAVENGING AND REFUSE DISPOSAL DIVISION.

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

Herewith is submitted the report of the above division for the year 1919.

The records of the scavenging division have been compiled for the past six years with a view to the standardization of the various tables appended to this report. Consequently, a better comparison can now be made of the work done, one year with another. Take, for example, Table No. 1, and compare 1918 with 1919. As a basis for comparison we must bear in mind that in 1918 the department worked 81 horses, but in the spring of 1919 15 horses were sold. Although we were working 15 horses less in 1919, the total gross cost of scavenging for the year was $83,741.50, as against $89,577.73 for 1918. Wagon repairs, harness repairs and shoeing cost practically as much for our diminished horse power in 1919 as in 1918, owing to the higher cost of materials and higher wages. Our clean-up cost approximately $4,000.00 more in 1919, and hired teams, employed between August and December, cost an extra $5,465.00 for the removal of ashes alone.

Now let us compare Table No. 2 with its predecessor of 1918, and we find that the combined total number of garbage loads in 1918 was 13,278, weighing 36,878,000 pounds, giving an average load of 2,777 pounds. In 1919 we get a total of 13,237 loads of garbage (practically the same), but the weight of the latter was 39,985,738 pounds, with an average of 3,020 pounds. This readily shows that the weight of garbage collected in 1919 was over 3,000,000 pounds more than in the year previous, although the numbers of loads are nearly the same in both cases. Each load, therefore, on an average, for 1919 was 243 pounds heavier than that of the year before. This is an improvement in the right direction as far as actual cost of collection is concerned. All the other classes of refuse collected show a slight increase in average loads, with the exception of ashes.

A glance at the Table No. 3, showing the cost of scavenging by city-owned teams, will reveal the fact that, although the cost of collection has gone up in 1919 as against 1918, the augmented cost of collecting each class of refuse *by load* is only, *pro rata*, with the percentage of increase automatically added by existing circumstances, due to inflated costs and values. Again, in 1918, this department paid the scavengers for six statutory holidays, but in 1919 eight statutory holidays were paid for. These extra costs are added each month as they occur, and affect the cost of collection of each class of refuse in the same ratio as there are scavengers employed regularly.

By looking at Table No. 4, we find the credits from various civic departments on requisitions for 1919 amounting to $4,265.72. In 1918 the department earned $11,942.33. The diminished total for 1919 is due to our diminished horse power, so that we curtailed the work done for other departments considerably. We still remove the manure from the fire halls throughout the city.

Teams and Teamsters

We began the year with 81 horses and 2 drivers. In the month of April, 15 horses were sold, and in September one horse died. This leaves us with a total of 65 work horses and 2 drivers. These are working at full strength as follows:

14 teams on garbage	28 horses
16 singles on garbage	16 horses
2 teams on tins	4 horses
8 singles on tins	8 horses
3 singles on ashes	3 horses
1 team on night soil	2 horses
2 teams on credits and "swing"	4 horses
	65 horses

At the present rate of pay, one statutory holiday costs the department approximately, for wages alone, $197.75, and for horse feed and board, $65.00, making a total of $262.75. Thus it will be seen that eight statutory holidays cost just over $2,000.00 and this amount must be spread over the cost of collection in every month where a holiday occurs. On May first, a new schedule of wages became effective, and continued in operation for the balance of the year.

Teamsters are paid	$25.30 per week
Single drivers paid	24.20 per week
Night soil teamsters	26.40 per week
Night soil helper	24.20 per week

The custom of allowing the scavengers to stop work at twelve noon on Saturday is still in force.

The gross cost of operation for Scavenging Division is as follows for 1919:

Wages—teamsters, etc	$54,582.25
Board and feed for horses	22,601.70
Shoeing	2,576.30
Harness repairs	1,206.35
Wagon	1,944.93
Sundays and holidays in barn	829.97
City-owned, total scavenging	$83,741.50
Spring clean-up, hired teams	$13,563.11
Helpers and gangs	7,800.62
Hired teams on ashes	5,465.00
Total hired during year	$26,828.73

The cost of scavenging for any city may be divided under two heads: (1) actual collection; (2) haulage.

Actual Collection consists of picking up all refuse from the rear of the premises of private houses, blocks, etc. This may again be subdivided as follows: (1) garbage; (2) tins and incombustible refuse; (3) ashes. The cost of picking up any one class of refuse if practically the same in all cases where receptacles are used, whether the removals are made by wagon, truck or trailer. But when we come to the question of *Haulage* a great difference may be noted. Take, for example, our garbage haul from Fort Rouge and River Park districts to the incinerator, which is approximately a distance of three miles. Assuming that a team will walk three miles an hour and collect two loads per day, we find that each half day of 4½ hours is divided up as follows: one hour on the road from city barn to Fort Rouge (point of beginning actual work), actual collection of one load, 1½ hours, hauling of load to its destination at the incinerator and the journey back to the city barn, 2 hours. Thus we see clearly that each day of 9 hours work may be divided up:

Actual collection	3 hours (2 loads)
On the road	6 hours (2 trips)

Therefore, in this case, the actual collection of 2 loads of garbage costs $2.70, at 90c per hour, and the haulage costs $5.40.

As an alternative, we would strongly recommend a system of trucks and trailers, to bring down the high cost of haulage in the city. For example: Four teams could leave the city barn, each hauling an empty trailer of 3½ cubic yards capacity. At the end of one hour they would be ready to begin work, as the journey to Fort Rouge takes approximately one hour. During the remaining 8 hours of *actual collection* each team could pick up at least 4 loads. The first four trailers could be exchanged for empty ones at specified points on the district, as one truck could haul 2 empty trailers to these points, and collect the 2 full ones en route. The truck would take these full trailers to the crematory and the teams would begin their collection as before, with the empty trailers, until the time arrived for the next transfer as before. The last load of the evening could be hauled directly to the barn, and the transfer made there. It is at once clear to the observer that an efficient service could be given by such a system as this at far less cost, *owing to the saving in the long haul.* The teams would thus be engaged in work for which they are best fitted, viz., the actual collection of garbage from house to house, while the motive power would be supplied for the long haul at a minimum cost in time and expense. This system, of course, could be worked to a time schedule, and a loaded trailer under this arrangement would not have to wait for a transfer, because an empty trailer could be left waiting, ready for the exchange, at any point previously agreed upon, and at any time.

INCINERATORS

As usual, we give the disposal of garbage and other combustible refuse in one table, while the number of animals destroyed are given on another. As will be seen, the incinerator on Saskatchewan Avenue has been destroying the whole of the combustible refuse of the city for the whole year, with the exception of a few weeks when it was under repair, and Elgin Avenue crematory was opened up for its relief. By comparing 1918 with 1919, we find that the total refuse destroyed in 1919 was nearly four millions of pounds in excess of 1918, and the cost of destruction for the whole year was 5 cents per ton cheaper in 1919. Our revenue for the latter year was $4,576.15 for the machine, as against $1,482.46 in 1918.

Again, it is worthy of note that during the whole of 1919 not a pound of coal was used at Crematory No. 3, showing clearly that forced draught is far cheaper as an aid to perfect combustion than coal.

Our gross cost of destruction for 1918 was $7,611.96, while in 1919 it was only $7,287.16.

MANURE

The Department still holds to the policy of providing dumps for manure, and East Kildonan gives a total of 13,482 loads for 1919, as against 12,456 loads in 1918. Brookside received 3,955 loads, making a total for the year of 17,437 loads, deposited in authorized places, but in addition to this many loads were deposited in city lots for garden purposes.

Respectfully submitted.

J. H. PEARSON,
Chief Health Officer.

ACTUAL COST OF SCAVENGING, 1919

1919	Wages	Board and Feed No. 1 Stable	Shoeing	Harness Repairs	Wagon Repairs	In stable		City Owned Totals	Hired Totals	Grand Totals
						Pay for Sundays	Pay for Holidays			
January	$ 5,596.60	$ 2,187.05	$ 180.37	$ 72.00	$ 143.93	$ 45.96	$ 11.49	$ 8,237.40	$	$ 8,237.40
February	4,993.61	1,975.40	170.02	106.90	243.64	45.96		7,535.53		7,535.53
March	5,336.30	2,187.05	210.18	121.75	159.28	57.45		8,072.01		8,072.01
April	4,908.19	1,861.50	248.43	112.25	132.69	45.96	11.49	7,320.51		7,320.51
May	2,506.06	2,108.00	38.40	83.75	80.40	25.30	190.30	5,032.21		5,032.21
June	535.06	1,726.35	142.94	75.40	82.14			2,561.89		2,561.89
July	5,278.26	1,791.80	288.55	114.00	188.58	50.52	25.26	7,736.97		7,736.97
August	5,022.43	1,791.80	283.68	90.60	214.82	63.15	12.63	7,479.11	2,153.00	9,632.11
September	5,165.43	1,717.85	262.39	113.25	164.84	48.36	12.09	7,484.21	405.00	7,889.21
October	5,235.38	1,765.45	395.66	119.00	91.48	48.36	12.09	7,667.42	453.60	8,121.02
November	4,798.67	1,708.50	225.01	104.30	199.25	63.15		7,098.88	1,117.80	8,216.68
December	5,206.26	1,780.95	130.67	93.15	243.88	48.36	12.09	7,515.36	1,335.60	8,850.96
	$54,582.25	$22,601.70	$2,576.30	$1,206.35	$1,944.93	$542.53	$287.44	$83,741.50	$5,465.00	$89,206.50

Scale of pay increased May 1st, 1919.

These records show the actual monthly expenditures. The Comptroller's reports include wages on the fortnightly basis and consequently differ from these figures.

Deduct credits for other departments	$ 4,265.72
Net cost of scavenging by city owned-teams	$ 79,475.78
Cost of hired teams during year with helpers	26,828.73
Total cost of scavenging	$106,304.51

*Sundays and holidays in June, 1919, teamsters and stablemen on strike. Horses attended to by sanitary inspectors.

Cost of hired teams:	
Clean up, teams	$ 13,563.11
Clean up, helpers	7,800.62
Ash teams, August to December (inclusive)	5,465.00
Total cost of hired teams during year	$ 26,828.73

NUMBER OF LOADS AND WEIGHTS OF REFUSE COLLECTED BY CITY-OWNED TEAMS, 1919

1919	GARBAGE (in lbs.)									TINS (in lbs.)								
	Teams			Singles			Combined			Teams			Singles			Combined		
	Loads	Av. Weight	Total Wgt.	Loads	Av. Weight	Total Wgt.	Loads	Av. Weight	Total Wgt.	Loads	Av. Weight	Total Wgt.	Loads	Av. Weight	Total Wgt.	Loads	Av. Weight	Total Wgt.
Jan	544	3346	1,820,400	640	2632	1,685,000	1184	2960	3,505,400	32	2787	89,200	336	2083	700,100	368	2144	789,300
Feb	517	3380	1,747,500	573	2595	1,487,500	1090	2967	3,235,000	35	2482	86,900	328	2072	679,800	363	2112	766,700
Mar	548	3482	1,908,600	605	2640	1,597,200	1153	3040	3,505,800	55	2503	137,700	341	2109	719,300	396	2164	857,000
April	561	3700	2,075,800	636	2758	1,754,600	1197	3202	3,830,400	89	2403	213,900	448	2090	936,600	537	2142	1,150,500
May	294	3539	1,040,700	338	2737	925,400	632	3110	1,966,100	34	2535	86,200	240	2160	518,600	274	2207	604,800
June	78	3058	238,564	103	2587	266,474	181	2735	505,038				9	2500	22,500	9	2500	22,500
July	679	3391	2,302,500	797	2721	2,169,000	1476	3022	4,471,500	101	2645	267,200	362	2236	809,650	463	2325	1,076,850
Aug	610	3404	2,076,800	678	2673	1,812,600	1288	3019	3,889,400	87	2551	221,800	371	2104	780,800	458	2184	1,002,600
Sept	591	3464	2,047,700	671	2828	1,898,000	1262	3126	3,945,700	92	2544	234,100	395	2406	950,400	487	2432	1,184,500
Oct	636	3080	1,959,600	653	2632	1,719,200	1289	2856	3,678,800	85	2500	212,500	451	2234	1,097,790	536	2444	1,310,290
Nov	574	3250	1,866,000	606	2593	1,571,700	1180	2912	3,437,700	91	2584	235,190	370	2395	886,300	461	2432	1,121,490
Dec	634	3533	2,240,400	671	2644	1,774,500	1305	3076	4,014,900	111	2440	270,900	350	2342	819,800	461	2365	1,090,700
Totals	6266	3403	21,324,564	6971	2676	18,661,174	13237	3020	39,985,738	812	2531	20,555,90	4001	2229	8,921,640	4813	2280	10,977,230

	ASHES (in lbs.)									NIGHT SOIL (in lbs.)			Total Loads Collected
	Teams			Singles			Combined						
	Loads	Average	Lbs.	Loads	Average	Lbs.	Loads	Average	Lbs.	Loads	Average	Lbs.	
January	994	4200	4,174,800	822	3000	2,466,000	1816	3657	6,640,800	46	4000	184,000	3,414
February	896	4200	3,763,200	722	3000	2,166,000	1618	3664	5,929,200	44	3900	171,600	3,115
March	900	4200	3,780,000	834	3000	2,502,000	1734	3622	6,282,000	47	4000	188,000	3,330
April	350	4200	1,470,000	388	3000	1,164,000	738	3569	2,634,000	46	4000	184,000	2,518
May	100	4200	420,000	140	3000	420,000	240	3500	840,000	24	3900	93,600	1,170
June				3	3000	9,000	3	3000	9,000	5	4200	21,000	198
July	20	4200	84,000	160	3000	480,000	180	3133	564,000	47	4100	192,700	2,166
August	98	4200	411,600	230	3000	690,000	328	3359	1,101,600	45	4000	180,000	2,119
September	132	4200	554,400	240	3000	720,000	372	3426	1,274,400	45	4185	188,325	2,166
October	154	4200	646,800	310	3000	930,000	464	3398	1,576,800	48	4000	192,000	2,337
November	116	4200	487,200	344	3000	1,032,000	460	3302	1,519,200	45	4100	184,500	2146
December	115	4200	483,000	430	3000	1,290,000	545	3418	1,773,000	48	4100	196,800	2,359
Totals	3875	4200	16,275,000	4623	3000	13,869,000	8498	3547	30,144,000	490	4033	1,976,525	27,038

COST OF SCAVENGING BY CITY-OWNED TEAMS DURING 1919

1919	GARBAGE							TINS						
	Teams		Singles		Combined		Total Cost	Teams		Singles		Combined		Total Cost
	Load	Ton	Load	Ton	Load	Ton		Load	Ton	Load	Ton	Load	Ton	
January	$3.61	$2.19	$2.88	$2.23	$3.21	$2.17	$3,810.62	$3.45	$2.45	$2.82	$2.71	$2.88	$2.68	$1,060.80
February	3.57	2.11	2.84	2.18	3.19	2.15	3,479.05	3.55	2.82	2.79	2.69	2.86	2.71	1,041.04
March	3.64	2.09	2.88	2.18	3.24	2.13	3,742.60	3.59	2.86	2.78	2.63	2.89	2.67	1,147.74
April	3.71	2.01	2.95	2.14	3.31	2.07	3,964.89	3.59	2.99	2.84	2.72	2.96	2.77	1,594.02
*May	5.76	3.25	3.95	2.88	4.79	3.08	3,031.14	5.71	4.51	3.95	3.66	4.17	3.78	1,143.61
*June	5.59	3.66	4.26	3.29	4.83	3.45	874.86			4.03	3.30	4.03	3.30	36.35
July	4.06	2.39	3.22	2.37	3.61	2.38	5,332.88	4.01	3.02	3.24	2.90	3.41	2.93	1,580.77
August	4.19	2.46	3.32	2.48	3.73	2.47	4,816.50	3.91	3.06	3.21	3.06	3.34	3.06	1,533.53
September	4.15	2.40	3.31	2.34	3.70	2.37	4,681.93	3.89	3.05	3.18	2.65	3.31	2.72	1,615.90
October	4.02	2.61	3.17	2.41	3.59	2.52	4,637.24	3.89	3.11	3.09	2.54	3.22	2.63	1,726.35
November	4.03	2.48	3.18	2.45	3.59	2.46	4,244.37	3.76	2.90	3.04	2.54	3.18	2.61	1,467.99
December	3.93	2.22	3.17	2.40	3.54	2.30	4,620.94	3.61	2.97	3.02	2.58	3.16	2.68	1,460.64
Totals	$4.01	$2.36	$3.16	$2.36	$3.56	$2.36	$47,237.02	$3.83	$3.03	$3.07	$2.77	$3.20	$2.80	$15,408.74

	ASHES							NIGHT SOIL			Gross Cost of Scavenging	Profits on Outside Work	Net Cost of Scavenging
	Teams		Singles		Combined		Totals	Teams		Totals			
	Load	Ton	Load	Ton	Load	Ton		Load	Ton				
January	$1.78	$ .84	$1.38	$ .92	$1.60	$ .87	$2,909.30	$5.76	$2.88	$265.39	$8,046.11	$96.73	$7,949.38
February	1.75	.83	1.39	.92	1.59	.87	2,583.20	5.65	2.89	249.00	7,352.29	111.50	7,240.79
March	1.79	.85	1.24	.83	1.52	.84	2,648.00	5.74	2.87	270.24	7,808.58	25.79	7,782.79
April	1.75	.83	1.39	.92	1.56	.87	1,153.31	5.85	2.92	269.23	6,981.45	17.15	6,964.30
*May	2.74	1.30	1.94	1.29	2.27	1.30	546.14	7.69	3.92	184.65	4,905.54	4.83	4,900.71
*June			2.36	1.56	2.36	1.56	7.09	8.21	3.91	41.07	959.37		959.37
July	1.82	.87	1.42	.95	1.47	.94	265.09	6.51	3.18	306.02	7,484.76	343.06	7,141.70
August	1.83	.87	1.59	1.06	1.66	.99	545.94	6.59	3.29	296.88	7,192.85	126.89	7,065.96
September	1.80	.86	1.56	1.04	1.64	.96	613.51	6.60	3.16	297.17	7,208.51	109.65	7,098.86
October	1.75	.83	1.55	1.04	1.62	.95	752.96	6.39	3.19	306.87	7,423.42	294.56	7,128.86
November	1.78	.84	1.49	.99	1.56	.94	721.01	6.31	3.09	284.35	6,717.72	112.29	6,605.43
December	1.74	.83	1.51	1.01	1.56	.96	852.91	6.37	3.29	306.05	7,240.54	205.43	7,035.11
Totals	$1.80	$ .85	$1.51	$1.01	$1.60	$ .90	$13,598.46	$6.27	$3.11	$3,076.92	$79,321.14	$1,447.88	$77,873.26
*Add feed of horses during strike—not working											1,602.52		1,602.52
Gross cost charged scavenging											$80,923.66	Net cost	$79,475.78

CREDITS FROM VARIOUS CIVIC DEPARTMENTS ON REQUISITION, 1919

1919	Fire Halls	City Pound	Crematory No. 3	Stable No. 1	Street Commissioners	Engineer	Machine Shop	Civic Buildings	Police Station and Special	Cash and Manure sold	Totals
January	$129.77	$1.65	$	$88.30	$ 3.30	$ 8.25	$	$39.75	$	$17.00	$288.02
February	128.80	.45		84.00		28.87		35.62		17.00	294.74
March	121.27			79.45		37.53		33.97		17.00	289.22
April	135.27	13.15		120.38		28.87		38.09	4.95	15.50	356.21
*May	64.00			31.50						36.00	131.50
*June											
July	337.50	3.00		121.00			44.10	60.47	24.20	5.00	595.27
August	152.20	4.70		81.60		37.80	14.85	34.00	4.50	83.50	413.15
September	128.20	2.70	8.10	134.20		12.60	6.30	44.65		48.60	385.35
October	132.20	2.40	16.50	96.89		32.40	2.10	36.20		219.87	538.56
November	127.20	1.70		115.20	104.85	20.70	10.80	68.00		45.00	493.45
December	214.60	2.00		112.40		4.95	5.30	47.40	3.60	90.00	480.25
Totals	$1,671.01	$31.75	$24.60	$1,064.92	$108.15	$211.97	$83.45	$438.15	$37.25	$594.47	$4,265.72

*No teams working from May 15th, 1919, to June 27th, 1919—Strike of teamsters.

STATEMENT SHOWING THE AMOUNT OF REFUSE DESTROYED AT CREMATORY No. 3 DURING 1919, AND COST OF DESTRUCTION

1919	Garbage (in lbs.)	Animals (in lbs.)	Total destruction (in lbs.)	Ash Cartage	Coal used (in lbs.)	Light and Power Cost	Wages	Cost of coal	Gross cost of destruction	Revenue	Net cost of destruction	Gross cost per ton	Net cost per ton	Coal used (in lbs.) per ton destroyed.
Jan.	3,655,200	14,800	3,670,000			$ 60.07	$ 485.15	$	$ 545.22	$ 112.10	$ 433.12	29.7c	23.6c	
Feb	3,358,900	10,200	3,369,100			36.79	468.79		505.58	78.05	427.53	30.0c	25.3c	
Mar	3,664,200	26,900	3,691,100			38.47	510.78		549.25	218.20	331.05	29.7c	17.9c	
April	4,056,600	26,600	4,083,200			51.14	490.52		541.66	355.40	186.26	26.5c	9.1c	
*May	2,068,000	7,600	2,075,600			28.44	287.51		315.95	98.15	217.80	30.4c	20.8c	
*June	475,400	1,400	476,800			6.00	59.17		65.17		65.17	27.3c	27.3c	
July	5,103,800	22,100	5,125,900			64.49	729.05		793.54	551.85	241.69	30.9c	9.4c	
Aug	4,214,800	22,400	4,237,200			59.60	664.78		724.38	417.00	307.38	34.2c	14.4c	
‡Sep.Cr.1	1,559,750	9,350	1,569,100		17,000		347.18	95.62	442.80	117.30	325.50	56.4c	41.4c	21.6
‡Sep.Cr.3	2,634,600	3,600	2,638,200			46.05	299.91		345.96	133.00	212.96	26.3c	16.1c	
‡Oct.Cr.1	3,192,400	10,400	3,202,800		26,500		700.55	149.06	849.61	109.60	740.01	53.0c	46.2c	16.5
‡Oct.Cr.3	649,700	1,300	651,000			25.08	24.00		49.08	30.55	18.53	15.1c	5.7c	
‡Nov.Cr1	906,700	1,000	907,700		10,000		270.66	56.25	326.91	129.46	197.45	72.0c	43.5c	22.0
‡Nov.Cr3	2,768,300	5,900	2,774,200			64.80	423.47		488.27	125.15	363.12	35.2c	26.1c	
Dec	4,229,800	21,200	4,251,000			52.48	691.30		743.78	234.20	509.58	35.0c	23.9c	
Totals	42,538.150	184,750	42,722,900		53,500	$533.41	$6,452.82	$300.93	$7,287.16	$4,576.15	$2,709.01	34.2c	12.7c	2.5

Crematory No. 2 closed down all year.
*Crematory No. 3 closed down on account of strike, May 15th, 1919, and opened June 27th, 1919.
‡Crematory No. 3 closed for repairs September 15th, 1919, and Crematory No. 1 opened on this date for relief of No. 3.
‡Crematory No. 3 opened at full capacity November 17th, 1919, and Crematory No. 1 closed on this date.

NOTE.—As there was no appropriation for Crematory No. 1 during 1919-1920, operation for relief of No. 1 was charged to No. 3.

TABLE SHOWING THE NUMBER OF ANIMALS DESTROYED AT CREMATORIES, WITH WEIGHTS OF SAME, FOR 1919

1919	CREMATORY No. 3, SASKATCHEWAN AVENUE						CREMATORY No. 1		CREMATORY No. 2
	Horses	Weights	Cattle	Weights	Dogs	Weights			
January	10	13,000			33	1,800			
February	7	9,700			9	500			
March	20	26,900							
April	15	22,600	1	500	65	3,500			
*May	4	6,400			24	1,200	Closed—See Footnote		Closed all year
*June					32	1,400			
July	14	19,100	1	100	60	2,900			
August	13	19,700			47	2,700	Horses	Weights	
September	2	2,000			27	1,600	8	9,350	
October					24	1,300	8	10,400	
November	4	5,000			17	900	1	1,000	
December	14	19,100	1	900	20	1,200			
Totals	103	143,500	3	1,500	358	19,000	17	20,750	

*Crematory No. 3 closed 15th May on account of strike and opened June 27th, 1919.
Crematory No. 3 again closed for repairs September 15th, 1919, and opened November 17th, 1919.
Crematory No. 1 opened for relief of No. 3, September 15th, 1919, and closed November 17th, 1919.

VARIOUS KINDS OF REFUSE DEPOSITED ON NUISANCE GROUNDS, 1919

1919	MANURE		TINS AND REFUSE (lbs.)	
	East Kildonan Loads	Brookside Loads	Old Nuisance Ground Private Loads	
			Loads	Weights
January	1,129	246	229	551,600
February	1,022	227	189	438,200
March	1,085	265	208	454,900
April	1,185	287	315	708,400
May	1,159	335	389	1,003,400
June	1,086	315	501	1,200,000
July	1,311	501	533	1,264,900
August	1,148	450	480	1,261,300
September	1,083	454	553	1,527,000
October	1,184	305	443	1,142,200
November	1,007	247	237	530,100
December	1,083	323	286	836,800
Totals	13,482	3,955	4,363	10,918,800

REPORT OF SMOKE INSPECTOR

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Sir:

I beg to report on smoke nuisances and their prevention as dealt with during the year ending December 31st, 1919.

The following table is a record of observations and inspections of matter relating to smoke prevention, together with notices served in the same connection.

TABLE SHOWING NUMBER OF OBSERVATIONS OF CHIMNEYS AND SMOKE STACKS, INSPECTIONS OF BOILERS AND BOILER EQUIPMENT, WITH NOTICES SERVED MONTH BY MONTH FOR 1919.

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Observations	37	11	12	9	11	5	11	13	22	11	20	31	193
Inspections	47	21	31	25	21	11	23	19	35	25	43	58	359
Total	84	32	43	34	32	16	34	32	57	36	63	89	552
Statutory Notices	2	1	1				1	4	1	1	2		13
Informal Notices	11	8	8	7	5	3	7	8	10	9	13	13	102
Total	13	9	9	7	5	3	8	12	11	10	15	13	115

From this table it will be seen that one hundred and ninety-three observations of chimneys and smoke stacks were taken.

Inspections of boilers, boiler equipment, fuel supplies and other matter relating to smoke prevention or abatement were made on three hundred and fifty-nine occasions, making a total of five hundred and fifty-two observations and inspections.

Thirteen statutory notices were served, and on one hundred and two occasions it was considered necessary to caution persons who did not appear to be exercising sufficient care in preventing the escape of objectionable smoke into the atmosphere.

In my report for 1918 it was mentioned that, during a part of that particular year, when very little, if any coal from south of the boundary line was imported into the City of Winnipeg, no serious fouling of the atmosphere by objectionable smoke occurred.

Towards the close of that year importations were renewed, and with them the bituminous variety of coal again arrived in the city and a corresponding fouling of the atmosphere promptly occurred.

During the period when no American coal could be obtained, there was an increased demand for Canadian coal of various grades, and there appears to be no record of any description that the slightest inconvenience was experienced by any manufacturer or other person in the city on account of there being no American coal obtainable.

Unfortunately, these shipments of imported bituminous coal have been well sustained during 1919, to the great disadvantage of the average citizen and to the curtailment of Canadian products, many of which not only compare very favorably with the imported article, but in many directions are superior to them.

It is to be regretted that such conditions prevail. It is nevertheless a fact that in some quarters of the city preference is given to smoke evolving, imported coal, rather than Canadian fuels which are not only free from the objection of seriously fouling the atmosphere with smoke, but are less expensive and of a higher order. Coal dealers and importers are largely to blame for this untenable position.

It is a frequent occurrence for owners and agents of apartment blocks and other large buildings to order "steam coal" from their dealers, without specifying any particular kind, not being familiar with any of its merits or demerits, only that it shall produce steam. The said dealers, with few exceptions will, regardless of the harm they know they will occasion to the neighborhood in which the premises are situated by the emissions of objectionable smoke from chimney and smoke stack, deliberately send some of this smoke evolving, bituminous American coal, such as Youghiogheny, Miller's Creek, splint or others high in volatile combustible constituents.

It would be quite as easy for the dealers who are called upon to exercise their own discretion in the fuel supplied to sell to their patrons a good Canadian coal, such as Cadomin, Mountain Peak, Western Gem, Greenhill, or the kind of coal frequently quoted as

Canadian Pocahontas. These are some of the best known Canadian coals, and they are all good steam producers, so that the dealer would be perfectly justified when "steam coal" is ordered to send any one of these instead of the smoke evolving, dirt producing imported article.

There are, however, coals of a higher standard brought into Canada which are admirably suited to the needs of Winnipeg; one to which no exception can be taken is known as Pocahontas coal. This coal can be used for almost any purpose in the domestic furnace, heater, range and stove under restricted conditions, as well as for high or low pressure boilers.

This, however, is a semi-bituminous coal, is high in B.T.U.'s, low in volatile gases, low in ash and consequently will not evolve objectionable smoke. Even this coal, with all its merits, should not displace Canadian products.

During the past year rumours were current that there would be a shortage of American anthracite or hard coal in the winter. Circumstances have demonstrated the fact that no justification existed for these rumours for the supply has been more than sustained.

It would have been a blessing in disguise if the rumours had been more than mere rumours, for, even if it had been impossible to bring a single ton of imported anthracite into the City of Winnipeg, there need not have been any hardship occasioned to our citizens, for it would then have been necessary for the public to take a little more interest in Canadian products and pressure brought to bear upon those responsible for holding in check the development of our mighty resources, while every encouragement appears to be afforded to the importation of fuel of all kinds.

This situation demands the serious consideration of all who are interested in the welfare of this vast Dominion.

There can be no reason adduced which can justify the importation of an article such as coal into Canada, which can be produced in such prodigality, when no substantial claim can be accepted that the imported article is in the slightest degree superior to the article found within our own borders.

Being confident that it is in the best interests of the health of the community that the atmosphere be rendered as clear and as free from fouling by objectionable smoke as circumstances will reasonably permit, I venture to hope that instructions will be given to improve conditions by enforcing, when necessary, and as directed by the Medical Health Officer, the provisions of the Public Health Act of Manitoba, dealing with the abatement and prevention of smoke nuisances.

I have the honor to be, Sir,

Your obedient servant,

W. F. THORNLEY,

Deputy Asst. Chief Health Inspector and Smoke Inspector.

REPORT OF THE TENEMENT INSPECTOR

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit the following report of tenement inspection and action taken during the year 1919 in housing conditions.

During the war the building of dwellings and tenements was practically at a standstill and, now that the war is over, we are confronted with a serious shortage of houses and with no immediate relief in sight. Dilapidated buildings that had been vacant for years have been opened up, repaired and rented, and, while this has helped a little, the supply is not nearly equal to the demand.

While the present shortage of houses exists we do not feel justified in serving ejectment notices, although many of our people are presently living under conditions that are neither desirable to them or to the welfare of the community as a whole.

We have had to meet the situation by permitting the occupation of a number of basement suites that, under ordinary conditions, would not be agreed to. In such cases we have insisted on a number of improvements being made in order to safeguard the health of the occupants, and the premises are being kept under observation.

A number of office buildings have been altered so as to provide suites of rooms, and, while conditions are not all that could be desired, we have endeavored to obtain the best possible conditions.

The doubling up of families in small houses has increased at such a rate, that, even if a large number of houses are built each year, the situation will not be much improved for years to come.

Reference has been made in previous reports to "farming out" of rooms for family use and we regret to report that this practice appears to be on the increase. While there is such a scarcity of dwellings, we hesitate to take action. During the year we dealt with only ten dwellings that were illegally occupied as tenements, and action was taken in these cases on account of overcrowding and general insanitary conditions. When infectious disease occurs in such premises, it is difficult to stop the spread of infection, and it is in this class of house that pneumonia and other respiratory diseases get in their deadly work. Moreover, we find that the death rate among children is in ratio to the crowding together of families. Such conditions increase the need for our Child Welfare and Tuberculosis Nurses.

The city is now in a deplorable condition on account of the housing shortage. It seems that builders are holding off from building operations on account of the high cost of building materials, and in the hope that this may be reduced. There does not, however, appear to be any prospect of this, and, in the meantime the situation becomes more acute. If relief is not obtained by private building, it may become the duty of the city as a corporation to provide accommodation by the erection of small houses and tenements.

We realize that the whole question is an economic one, but there is a public health aspect of the situation that we are interested in. Our people must be housed under sanitary conditions. At present there are hundreds of families living in one and two rooms sublet from other people where the conditions are far from healthy. In many cases we have had to be content with obtaining the best possible conditions under the circumstances and giving suitable advice and instructions rather than eject the tenants who probably could not find more suitable accommodation elsewhere.

Complaints relating to insanitary conditions, etc., in tenements and apartment blocks numbered 230 for the year. These complaints brought to our notice such conditions as the following: insanitary condition of lavatories, dampness of walls, cellars used for sleeping purposes, rats, cockroaches, garbage not properly kept, defective and choked drains, inadequate supply of water, insufficient lavatory accommodation, defective gas stoves, keeping cats and dogs, insufficient natural light, defective plumbing, dirty halls and corridors, lack of proper means of ventilation, bed bugs, no light in lavatory apartments, shaking rugs in courts and light wells, dirty basements, refuse and garbage thrown out of windows, accumulation of refuse, overcrowding, leaking roofs, no fly screens, refuse in yard, decaying vegetables in basement, sewage backing up, dead rats under floors, filthy wallpaper, frozen plumbing, gases and smoke from furnaces, storm sashes don't open, etc.

Inspections of tenements and apartment blocks numbered 1,081 and, in addition, many re-inspections, or follow-up visits, were made. Constant inspection and re-inspection is necessary in order to obtain and maintain proper sanitary conditions. Needless to state, most of our work is done in the older buildings and, as a rule, our notices are complied with promptly.

Respectfully submitted.

Alex. Officer,
Tenement Inspector.

REPORT OF CHIEF DAIRY INSPECTOR.

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit herewith the report of the Dairy Division for the year 1919.

While the premier duty of the officers of this division is undoubtedly to ensure that such milk supply as our city may happen to have shall be pure, clean and safe, yet during recent years the economic problems governing production and distribution of milk have become so acute that we have of necessity had to give some serious consideration to the question of supply, and on certain occasions we have been pessimistic concerning our source of supply, not only as regards ability to take care of present requirements, but also regarding adaptability to expansion, so as to care for our steadily increasing population.

There are two distinct phases in connection with the work of the Dairy Inspector, the first in importance from a health department stand-point embraces such inspection and regulation as we are at liberty to exercise inside the city limits, and is designed to thoroughly cover the distribution end of the business so that the consumer has the maximum amount of protection possible under existing conditions. There is no doubt that considerable good work can be accomplished along these lines, which may be briefly stated as follows:

Inspection of milk depots, pasteurizing plants, creameries, vehicles, milk shops, stores and restaurants, with examination of the milk and cream handled in these places, samples taken and examined for purity, cleanliness and wholesomeness.

This phase of the work is continuous with one certain object in view, namely, that, if possible, only pure, clean milk, handled in clean, sanitary premises, by properly qualified persons using clean receptacles and vessels, shall be delivered to the ultimate consumer.

With an unstable or dwindling milk supply, it will at once become patent to any person giving thought to the matter that no amount of supervision over the distribution end would increase or improve such supply, so that it is evident that inspection would be incomplete if it stopped here. This brings us to consider the second phase of the undertaking, which carries the Dairy Inspector into the country to the points of production, in order that the work may have a satisfactory completion. Not only is this work of a different character in regard to subject matter but also in regard to methods of application. In the city end of the business many of the benefits received and improvements effected in regard to our milk supply are brought about by largely restrictive measures, yet in the country or the production end of the business more improvements can be effected by peaceful efforts, suitably applied, as is proved by the fact that milk arrives in our city in much better condition from those districts where inspection has been tried.

LICENSES

Owing to the fact that our fiscal year commences on the first day of June in each year, this report, in so far as licenses are concerned, deals only with the seven months period from June 1st to December 31st, 1919. Applications for license received during that period numbered 110, which were dealt with in batches as soon as a sufficient number were inspected and found satisfactory. Owing to conditions over which we had no control, we were unable to commence these special inspections until the beginning of July. However, up to July 2nd, 53 applications had been passed, on July 16th, 22 more had been dealt with, while on August 20th a further batch of 25 were favorably considered. Having thus disposed of 100 out of 110 applications, the balance were finally combed out resulting in 6 additional licenses while 4 applications were rejected.

The total number of applicants recommended for license was 106, classified as follows:

Licensed dairies	99
City cowkeepers	2
Large pasteurizing plants	2
Small depots	3

The number of delivery waggons employed in connection with these licenses corresponds to a total of 230 license plates issued, namely 115 milk depot plates and 115 raw milk vendors plates.

The Licensed Dairies

This class comprises all those who produce and distribute milk from their own herd. Over 90 per cent. of these dairies are situated outside the city limits at distances varying from 4 to 12 miles from the city hall. There are approximately 100 of these dairymen in business and they collectively handle about 40 per cent. of our daily milk supply. They all handle raw milk and deliver from cans, the quantity bottled being practically negligible. Every year a number of these men sell out or transfer their business, but such changes are quite normal, as other fresh ones come in, taking the place of the absentees. Thus it is not surprising to note that the number of licensed dairymen has remained fairly constant at 100 since 1914, while in the year 1912 we had only 80 who supplied at that time 45 per cent. of the milk consumed daily. Some of these dairymen have been in business for 15 years or more and appear quite keen to continue, provided they are allowed to do so. In fact, there appears to be an ardent desire on the part of milk producers in the immediate vicinity of our city to obtain a license to sell their own product to the consumer. This would appear to hinge on the fact that we do not require such milk to be treated or bottled and so it escapes these items of expense in distribution and our licensed dairymen do not believe in incurring any expense which they consider unnecessary so that we cannot expect any improvement which would lead to eliminate the peddling of raw milk from cans unless such is brought about by legislation.

The same conditions apply to other forms of improvement necessitating the expenditure of additional capital. When building materials and labor were comparatively cheap it was not difficult to convince these people that certain improvements were desirable. But now, when they are uncertain as to how long things will last, when they see the prairie on which they had free grazing privileges being cultivated and enclosed, and they think of the present abnormal conditions, is it any wonder that they keep a tight hold of such capital as they have, the older ones determined to stick a little longer or until things get worse, while the younger element hesitate on the threshold.

SCORE CARDS

All licensed dairies are checked on the score card system, it being understood during the past two years that no license would be issued where the score obtained came below 350 out of a maximum of 500 points. The fact that renewals of license are due in summer is undoubtedly in favor of the dairymen, so that there is a possibility of some attaining a score at that time which they might have difficulty in holding all the year around. At this time the cows are on pasture, and naturally keep fairly clean, the winter accumulations of manure and rubbish have been removed and the buildings limewashed, or at least the dairyman has had the time to do these things. Yet in spite of this advantage, 10 failed to reach the 350 mark and as a consequence their licenses were held up, although subsequently a number of these made some improvements and requested further inspection and finally their score was adjusted to the required standard. It does not appear to be a square deal for the city when a dairyman who has to have considerable attention from the inspector during the winter, and who would rather follow the unclean than the clean route for 9 months out of 12, should be able by making one good clean up at the time his license is due to obtain a score sufficient to pass, and has his premises in such a shape that a refusal of license is hardly justified.

We have no regulations whereby we can deal with an application on the merits of the applicant's record.

Our score card is designed with a view to dealing with conditions known to exist and while it proves of splendid value in visualising conditions on a good modern dairy its value is not so evident when dealing with primitive or dilapidated conditions.

Score Card Classification:

Excellent	480	1
Very good	440 to 480	4
Good	400 to 440	29
Fair	360 to 400	33
Poor	Under 360	32
	Total	99

The Farm Shippers

The large city milk distributors have to depend on their supply coming from the producers, who for various causes are unable or have no desire to distribute their own product. These producers we refer to as farm shippers and may include cream shippers ss well as milk shippers, their premises being situated at various distances from the city, predominating in those districts more adapted for milk production, and favorably served with transportation facilities. They may be divided according to the distance from the city, into three zones, the first zone taking in a radius of 12 miles from the centre of the city, includes those shippers who are located in the same district as the licensed dairies, and they deliver their product daily at the city plants by means of waggons or trucks. It is these first zone shippers who are gradually being eliminated, some going further away, to districts where cheaper land and feed can be obtained while others take out a license and commence distribution on their own account. A large quantity of land in this zone has been brought under cultivation during recent years and this, together with the spread of the residential area of the suburban municipalities, the introduction of herd laws, and high speculative value of the land, has undoubtedly mitigated against the permanency of many milk producers in this zone.

The second zone includes all the district outside the 12 mile radius, and inside the 50 mile radius, and it is there that the majority of the regular milk shippers are located, the product being shipped in by railroad or suburban electric service. This district includes both mixed farming and grain growing areas and of the two the mixed farmer gives the impression of being the more permanent in so far as milk supply is concerned.

In this zone we also find several farms devoted almost entirely to milk production, such grain and fodder crops as are grown being not for sale but for feeding to the dairy herd.

There is no doubt that the producers in this zone have an advantage over those in the first zone, in that they are able to grow most of their own feed, they have more and better pasture, they have a use for all manure produced, they are better situated for raising their own calves and feeding of cows not required or undesirable for milking purposes. In the majority of cases, the proprietor owns his own farm and is desirous of making it his home so that any improvement in the way of good buildings, etc., may be looked upon as a permanent asset, whereas conditions nearer the city cause improvements of this character to be looked on as merely temporary and are expected to pay for themselves in a few years, or their construction would not be warranted.

We have several cases close to the city where large modern stables costing thousands of dollars and accomodating 50 or more cows have been erected on farms consisting of one to ten acres of land, until finally the surrounding land is occupied to such an extent that the building becomes practically useless for dairy purposes.

The third zone comprises the area outside the 50 mile and inside the 75 mile radius and may be referred to as the "winter milk zone," although it may include a few all-year shippers. In addition to grain growing, or mixed farming, some districts of this zone are more fitted for stock raising, particularly so in northern Manitoba, where the majority of farms carry at least a small herd of dairy cows, the product from which during the greater portion of the year is manufactured into butter, either at the farm itself or at some local creamery, or the cream may be shipped direct to the city. It has become the custom during recent years for the city milk firms to augment their supply during certain months by obtaining milk from some of these districts, which, while not yet specially fitted for this purpose, being more or less in the pioneer stage, will undoubtedly prove a certain factor in the future milk supply.

Milk Consumption

An average of 52,000 quarts of milk was consumed daily by our citizens during the past year, which allows a per capita consumption of 0.56 pints, the lowest level reached being in the fall when the supply dropped to 48,000 quarts, with a daily per capita consumption of 0.52 pints, while the maximum daily consumption with a plentiful supply in sight was 54,000 quarts at the rate of 0.58 pints per capita. It may be of advantage to note here that while during the period of minimum supply and consumption, practically every quart of milk supplied is consumed, yet during the period of maximum consumption, the supply often exceeds the demand, and we have a surplus on hand.

In view of the fact that high prices have been blamed for curtailing consumption, it may be stated here that in 1908 when milk sold at a comparative low price, the per capital daily consumption stood at 0.54 pints. Those figures do not include condensed milk, cream, milk powder, etc., but concern fresh milk only.

Even assuming that our population may during the past year have reached the 200,000 mark, we would still have a daily per capita consumption of 0.52 pints.

In order that we may understand the significance of these figures, it appears desirable to compare them with those expressing conditions regarding our neighbours to the south, and it may be as well to first explain that it is customary in the United States to employ wine measure for milk, so that the American quart of milk is twenty per cent. or one fifth less than our Imperial quart.

The average daily per capita consumption for the entire United States is 0.65 pints (0.52 pints Imperial measure).

New England has the largest per capita consumption of any section of the United States, with 0.725 pints (0.6 pints Imperial measure), so that it may be concluded that in so far as per capita consumption is concerned we compare very favorably with conditions across the line.

It is a notorious fact that some American cities occupy a much unhappier situation than do we in this respect. For instance, the city of Birmingham, Alabama, shows a growth in population somewhat similar to that of Winnipeg, the 1900 census showing 38,415 and the 1910 census 132,685, while it is claimed that the population now is 200,000. Yet the milk supply of this southern city consists, according to reports published, of approximately 5,000 gallons per day, allowing a per capita consumption of 0.2 pints; transposing from American to Imperial measure the daily supply is 4,000 gallons or 16,000 quarts, and the per capita consumption is 0.16 pints. Thus, here we have an instance of a growing city very similar to our own, similar as regards growth and development in population, similar health problems to cope with and yet having to struggle with a milk supply amounting to only one-third of that pertaining to our city when conditions with us are at their worst.

All this, however, does not prove that we have nothing to complain of, or that we should be satisfied. We should not only have enough milk, but abundance; we should not be satisfied with a half pint per capita consumption, but should endeavor to make it a three-quarter or even a whole pint, and we should also by every means endeavor to improve the quality, especially as regards cleanliness and safety.

It is useless to urge the public to consume more milk unless we can guarantee not only the supply but also quality and freedom from contamination.

The whole question resolves itself into one of education. The public must be taught to demand milk of a certain standard of quality, while the producer must be taught to produce only that class of milk demanded by the consumer, and abundance of it.

Our Future Milk Supply

During recent years we have had many conflicting and pessimistic prognostications regarding the state of our milk supply. We are periodically informed that dairymen are selling out, that cows and heifer calves are being slaughtered. Now, if the authors of these statements could be made to thoroughly understand the various features of dairying in all branches in our province so as to appreciate the tremendous advance in production of all dairy products during recent years, they would not see so much cause for alarm.

The number of dairymen who sell out each year constitute only a normal or reasonable proportion of those in the business, while the slaughter of calves is confined to a class which are perhaps as well slaughtered. We do not find heifer calves from good record dairy stocks being slaughtered, and it is a well known fact that a large proportion of calves born are not suitable for raising as cows.

There are approximately 25,000 farmers in the province engaged in dairying in some branch or other, of which 900 are shipping milk to Winnipeg, 1,500 more are shipping sweet cream to the city, while about 12,000 are shipping sour cream to the city butter factories. Now the sweet cream shipper gets more per unit for his product than the sour cream shipper, while the milk shipper takes in more money per unit than the sweet cream shipper. In fact, only about 500 of the 900 milk shippers are regularly concerned with our milk supply. The other 400 are really cream shippers who are switched on to milk during the winter and they don't object as it means more profit to them. The facts of the case are that with 15,000 dairy farms shipping their product to us and another 10,000 farms shipping to small country creameries, it is hard to imagine how we could be short of milk or dairy produce. The only danger to our milk supply would be in the event of the margin of profit as between milk and cream becoming so narrow as to discourage the shipping of milk, which is undoubtedly entitled to a larger per unit of profit on account of the producer losing the skim milk, and having to make daily shipments.

In so far as our first zone dairy farmers are concerned, we may certainly expect a decrease, but it has been previously shown that we must not depend on these dairymen who are on a weak foundation and are unable to guarantee our supply.

It is to the second and third zone producers that we must turn our attention; here we find every evidence of permanency and ability to deliver the goods, and it is undoubtedly to these districts that we must look for our milk supply of the future, and all our plans and ideas for efficient control must be based accordingly.

The position of Winnipeg is unique in respect to one phase of its milk supply. We have no competition to meet in the country; no other city or town has its agents out looking for milk and even so far as cream is concerned we are left more or less to our own territory. In other words, we provide the only market that the producer has, whereas further south, where the districts are more settled and cities and towns spread thicker, there is more competition for milk and the producer has a choice of several markets.

Country Inspection

Ten years ago, that is in the year 1909, the whole of the fresh milk and sweet cream consumed in our city was supplied from 320 dairies and farms, the majority of which were situated not more than 15 miles from the city. At that time the dairy inspection staff consisted of three Dairy Inspectors assisted by the Veterinary Inspector whenever his services were required, and these dairies received fairly adequate inspection. At the present time, 1919, we are receiving fresh milk from over 900 dairies and farms, and sweet cream for consumption from approximately 1,500 additional, the majority of which are situated at distances varying from 25 to 75 miles away. Our staff is no larger than in 1909, so that it can be easily understood that our inspection is inadequate in so far as the majority of the country shippers are concerned.

Not only should the milk shippers have an inspection service, but the sweet cream shippers too, as in many cases the cream is consumed raw. The sour cream shippers are not considered a source of danger now, as improved methods of butter making include high temperature pasteurization for the raw cream which renders the product perfectly harmless even if the cream had been exposed to pathogenic infection. The milk, too, from these uninspected areas is all pasteurized which renders it safe; but pasteurization cannot be expected to make bad milk good or dirty milk clean, and cannot be considered a panacea for all evils of faulty production.

Milk handled or produced in a careless manner is difficult to pasteurize successfully and we, in all probability, owe to the distributors of pasteurized milk, who we expect to turn out a first class article, some protection in the way of inspection, which would be of assistance in enabling them to turn out a better quality to the consumer.

Time and time again we have seen instances of dairymen deteriorating in their methods of handling milk immediately after quitting the distribution end of the business. They were very careful and particular when the onus of satisfying the consumer rested on themselves, but as soon as this responsibility was assumed by the distributing company the producer became careless, taking the attitude that the milk was pasteurized anyway and the rest was up to the company.

Constant inspection would check this tendency and improve the product.

COUNTRY STATIONS

Just as we have from 100 to 150 milk producers around Winnipeg who drive to town daily with their product, so are similar conditions arising or pertaining in the province so that at several small villages in the country we find from 50 to 150 farmers coming daily with milk or cream, which is collected by agents and shipped to the city. In some of the larger centres, plants or receiving stations have been built and are operated by one or other of the large city milk concerns, while in other districts the local storekeeker or creamery manager takes on this work. There is no doubt that the permanent country milk station does much to encourage industry in that particular section.

The chief advantage pertaining to these stations rests on their adaptability to the several conditions governing supply and demand. They serve to regulate our milk supply so that as far as possible it shall remain normal and surpluses be placed where of most advantage. Thus a station may supply us with milk for a period, then when milk becomes more plentiful the same station may ship sweet cream and sell the skim milk back to the farmer. If we do not require the cream, the farmer may do his own separation, delivering sour cream at the station where it is manufactured into butter.

Milk Production

Probably no branch of agriculture offers such extensive scope for improvement by means of propaganda which may be in the shape of literature, lectures and other means of instruction, including experiments along practical lines, than does that pertaining to the dairy industry.

It is much easier to teach the novice how to grow or produce grain than to teach him how to succeed in the production of milk. There are so many nationalities concerned, and many of these people have had no real opportunity of becoming properly conversant with the several intricacies which go hand in hand with milk production. Beginners merely copy the acts and methods of their neighbors and because they succeed in doing things equally as well, are apt to believe that they are getting the best possible results and the maximum financial return.

They do not appreciate the fact that the cow is a very delicate machine which must be given every care and attention in regard to housing, comfort, feed and water, including kind and gentle handling in order to give the best results.

She must be selected for her milking qualities, which can be sustained and often improved by means of the balanced ration. It has been demonstrated here and in other parts of Canada that the milk producer who is ignorant of the fundamental principles governing the flow of milk will also fail to comprehend the serious responsibility attached to the correct handling of his product and constitutes a distinct menace to the health of the public.

The average annual production of the Manitoba cow is under 4,000 pounds. Among the dairymen who confine themselves to producing milk close to the city the average comes to 4,500 pounds. This is not as it should be, and taken along with the fact that many producers do not specialize on growing feed for milk, it is evident that much of our milk is produced in a more expensive manner than is necessary. Of our hundred licensed dairies, 34 score good, and while the score card deals with sanitary production and handling only, it is a remarkable coincidence that these dairies have the highest average yield per cow, running approximately 6,000 pounds.

The 33 scoring fair have an average yield per cow of approximately 4,500 pounds. While the 33 lowest scorers can only average 3,500 pounds.

Thus we have a distinct relationship between a man's ability as a milk producer proved by the yield per cow and his desirability as a dairyman proved by the score card.

We have an instance on record where of two dairies situated about half a mile apart, one produced 50 gallons per day from 15 cows while the other could only get 45 gallons per day from a herd of 40 cows, over 30 of which were being milked at the one time.

The Tuberculin Test

The testing of cattle by means of tuberculin still appears to be unpopular with the producer, lack of vision and failure to appreciate the true value of such policies being the chief causes of this attitude.

The outstanding fact is that it is only in the production of "certified milk" that the use of the tuberculin test shows some monetary value to the producer. The encouragement of certified milk production and consumption would undoubtedly encourage the use of the tuberculin test and in order to do this it would be necessary to discourage or even prohibit the consumption of raw milk from untested cows. However, the matter of tuberculin testing is too large a problem for us to tackle, and it appears to be more desirable that the Provincial or Federal authorities should handle the matter. In so far as the city is concerned we have a certain remedy which could be much easier applied and would not entail any action outside our own limits, a remedy which would not only protect the consumer from tuberculosis, but is an absolute protection against all milk-borne diseases. This remedy will be spoken of later under pasteurization.

A large number of people misunderstand the "raison-d'être" of the tuberculin test, their idea being that the test is advocated to the end that a milk supply would be protected. The real force however behind Federal or State enforcement of the test is the Department of Agriculture, Live Stock branch; making every effort to stamp out the disease of tuberculosis in the same manner as any other disease is controlled or eradicated. Now, if this is done the matter of protection for a milk supply from tuberculosis would be simply a sequence, and the benefits would be shared by all concerned, commencing with the cattle themselves in health and comfort; the producer in protection from stock losses; while the consumer would have protection against risk of infection with bovine tuberculosis.

Four dairymen, selling raw milk in the city, have their herds tested, but only one of these produces certified milk, the demand for which is far and away in excess of the supply. Certified milk should find a place in all questions of milk supply, in fact it is the only form in which raw milk should be allowed to reach the table of the consumer.

Drastic measures for the eradication of tuberculosis among dairy cattle would not find many supporters among students of the present economic situation. The world's supply of cattle is very low and it has been proved that it is possible to breed and rear healthy stocks from infected parents. The high prices obtaining for dairy products may be reduced by increased production and all dairy products from diseased or unhealthy animals such as milk, cream and butter, can be rendered perfectly safe by means of pasteurization.

It would simply mean economic suicide at the present time to advocate any policy which would decrease the number of cattle in the province or the amount of food manufactured from milk and milk products.

As health officials we should be thankful that we have an alternative, which could not adversely affect, but may alleviate the economic situation and will give the consumer all the protection that the word implies. That alternative is pasteurization.

The owners of our small number of tested herds often have difficulty in purchasing sufficient healthy animals to fill vacancies; dealers do not care to test or guarantee animals when they can sell them as easily without such action, and it is only because each of these dairymen receives some distinct pecuniary advantage over his competitors, that we are able to hold them in line.

SICKNESS AND MILK BORNE EPIDEMICS

While the rural population may consider it cause for congratulating themselves on the fact that while they are in many cases isolated or far removed from opportunities of obtaining the services of a physician, yet they are so robust and hardy that they are able to keep going and withstand the effects of sickness much easier than a city resident. It is a fact that on many occasions a small epidemic will run its course in some rural settlement and the last thing any of those concerned would think of doing would be to call a doctor, or report the infection. Undoubtedly, it often happens that milk from these districts becomes infected, but such milk being pasteurized is rendered harmless before reaching the consumer.

Occasionally, however, it is in the household of the raw milk peddler that the infection occurs and if the disease is of a mild type and does not cause extreme functional disturbance, it is liable to be passed off as only a cold, slight sore throat, headache, abdominal pains, etc., and the milk supply becomes infected before anything serious is suspected, and the first indications we have are brought to our notice by the crop of victims on the milk route.

The scarlet fever epidemic in Weston was undoubtedly of this nature, the dairyman and his family having the disease in such a mild form as to require a careful medical examination in order to obtain a correct diagnosis, yet inside a few weeks in about 200 houses supplied by milk from this dairy, we found over 50 cases of scarlet fever, many of which proved fatal. Directly after the raw milk was cut off, the epidemic subsided, and although milk from the same dairy was still being distributed, but first pasteurized, no further crop of cases gave evidence of being in existence.

During the past 10 years, we have had about six milk borne epidemics of which four have assumed fairly large proportions and have furnished a number of fatal cases. Any one of these four was of sufficient magnitude and constituted such a menace to our population, as would have warranted the introduction of any regulation however drastic, which would have preserved us from the possibility of such things happening in the future. It is reasonable to suppose that we have, by inspection, nipped in the bud at least 5 prospective epidemics for each one of those which ran loose, and there is no doubt that we have had more than our share of good luck in handling this matter.

With our knowledge of the straight facts, some action should be taken, or must we wait until another epidemic, more serious than any in the past, shall bring us to more promptly realize, and act according to our responsibilities? Of the hundreds of cities, during the past 20 years, which have adopted pasteurization as a means of rendering their milk supply safe, over half had the necessity for such action brought home to them by the unwelcome presence of a most virulent milk epidemic.

We dread to think of the consequences here, should we be inflicted with an epidemic of septic sore throat, such as has been the lot of a number of large cities to the south, where an infected raw milk supply was the cause in each case. There was no question or argument as to the necessity of pasteurization and no opposition to its enforcement in any of these cities where such epidemics have occurred.

While we give raw milk the credit for spreading infection in certain cases, where we have direct proof, we may also infer that milk possibly may be responsible for many minor ailments and derangements of the digestive system. In fact we know that raw milk carelessly handled may contain organisms which, while not pathogenic, are highly detrimental.

Sediment Tests and Dirty Milk

The use of the sediment testing apparatus shows that, periodically, raw milk arriving in the city contains an abnormal amount of dirt. This dirt consists of fine particles of stable dust, manure, etc., and is productive of a very dangerous group of bacteria. The dairyman is generally very surprised when shown evidence that such a state should exist in regard to his milk and in most cases, he endeavors and succeeds in effecting some improvement.

The sediment test faithfully indicates conditions and methods employed on the farm and the extraneous matter collected has properties which allocate the source of the original contamination, such as clay, or mud from ditches and sloughs, manure from udder or body of cow, hairs, straw, chaff, or dust from stable air, and even street sweepings, where cans have been uncovered on a dusty street.

The results shown by use of the sediment test emphasize the necessity of care and cleanliness in production and the value of scientific treatment and up to date methods of handling by the distributor.

Milk Shortage

Commencing about 1911 or 1912 and continuing annually since that time we have had a more or less distinct shortage of milk, occurring generally during the last three months of the year and disappearing early in the year following. In the earlier years, when our milk supply, both summer and winter, came from a certain defined area, there was no place or district outside that area, where sufficient milk or an adequate train service could be found, to warrant any serious steps being taken to place such products on the city market during times of shortage.

Previous to the war, the city distributors imported large quantities of milk from the state of Minnesota during the shortage periods, simply because it was practically impossible to augment their daily supply from any source on this side of the line. During the war, the practise of importing what we will refer to as "Accommodation Milk" was discontinued, and an endeavor was made to build up the milk production industry in certain districts of the province, so as to provide our own "Accommodation Milk." A number of gathering plants and skimming stations were opened up at different country places, while the provincial government, by means of such measures as outlined in the Animal Purchase Act, gave assistance to hundreds of small farmers, who were thus enabled to establish the nucleus of a dairy herd. Assistance was also given in opening up small country creameries so that the producer was not only provided with productive machinery but also with a market for his produce.

In this manner, many fruitful fields, which can yield large quantities of "Accommodation Milk," are now open for exploitation by the city distributors, and that the system is feasible, may be judged from the fact that, while milk was scarce for a short period, in the fall of this year, yet no real shortage occurred and the momentary scarcity was due to an exceptional early winter.

In the same manner, as it requires an experienced or expert dairyman to obtain and maintain a record production herd, it also requires the assistance of an expert breeder to produce winter milk. The science of milk production, especially winter milk production, is an evidence of ability, not to assist nature, but to control, advance or retard natures efforts.

It is quite natural for cows to wish to calve in Spring, this being the custom of their ancestors and of practically all animal life in this country. Consequently, if left to their own instinctive devices, over 90 per cent. of our cows would be Spring calvers, commencing about March. This would give us abundance of milk during the Summer, but very little during the Fall and practically none during the greater portion of Winter. Even experts find a difficulty in having cows freshen at any desired time, so is it any wonder that the average dairyman or farmer has over two thirds of his herd calving in Spring and early Summer, so that he has abundance of milk when it is plentiful every place. It is evident that under ordinary circumstances, in order to have sufficient milk in the Winter, we must be prepared to take care of a large surplus in summer.

In former years it used to be the small dairyman who came out best during these periods of shortage, as he would buy additional cows to take care of his customers, but this year it is different and the small dairyman exhibits a tendency to limit or even decrease business, so that all additional consumers have had to depend on the city distributors for a supply. Consequently, we find that the quantity and proportion of pasteurized milk consumed during the year has increased from fifty per cent. in January to sixty per cent in December.

	Pasteurized	Raw
January	6,000	6,000 gals. per day.
May	6,000	6,000 gals. per day.
September	6,500	5,500 gals. per day.
December	8,000	5,000 gals. per day.

Thus during 1919 the quantity of pasteurized milk consumed has risen from 6,000 to 8,000 gallons per day, while the raw milk consumption has dropped from 6,000 to 5,000 gallons per day, which leaves us an approximate net gain of 1000 gallons per day on our total milk consumption.

PASTEURIZATION

The use of the term pasteurization is to a great extent misunderstood by many milk consumers, also by many of those who in other directions take an intelligent interest in questions concerning domestic milk. Probably this is due to the several and radical changes which have taken place in regard to the machinery and methods of pasteurization during the past twenty years, so that what formerly appeared to the observer to be a simple process of boiling milk, has developed along highly scientific lines into an elaborate but exact operation, whereby pure milk can be placed on the market in a safe and standard form without any appreciable change or alteration in its digestive and nutritive qualities.

It can thus be readily understood that those who obtained their impressions on pasteurization several years ago, may hold opinions which would be inconsistent with our present day knowledge of this subject.

Pasteurized milk is not boiled milk; neither must it be confused with "Sterilized Milk." It is true that, in the earlier methods of pasteurization, the milk was heated as high as from 175 degrees to 185 degrees Fahrenheit, which is 27 to 37 degrees below boiling point and this would account for the boiled flavor occasionally detected; but practice and experience have evolved better methods so that to-day we may confidently speak of pasteurization as being a scientific process in the true sense of the term. In scientific pasteurization the temperature of the milk is only raised to about 145 degrees, but held there for about 30 minutes, followed by rapid cooling and bottling for market.

This process does not cause any coagulation or objectionable changes in the milk, except that the cream is more thoroughly spread through the body of the milk and is not so liable to separate and rise to the surface, which is a condition very desirable to the distributors, as they wish every bottle to be filled with a uniform quality.

Scientific pasteurization destroys all pathogenic germs which may find their way into the milk either from diseased animals or sick persons. For example: the organisms causing tuberculosis, typhoid and scarlet fever, diphtheria, and septic sore throat are, if present, destroyed by pasteurization.

In addition to those specific organisms, there are a large number of suspicious organisms in raw milk which may give rise to serious internal disturbances, especially so in the case of infants. These organisms are also destroyed by pasteurization.

As a food it has never been shown that pasteurized milk does not contain all those nutritive and life giving bodies which go to constitute milk as an indispensible food for young children and no epidemic of sickness has been attributed to or proved to be caused by pasteurized milk.

Pasteurization has enabled the butter maker to turn out a better quality and keeping butter, which has placed Manitoba butter in the fore front on the world's markets; whereas, years ago, disease was sometimes spread by means of infected butter, yet, we have no instance of any infection being carried by creamery butter manufactured from pasteurized milk.

What pasteurization has done for butter it will do for milk, giving us a safe milk of high keeping qualities.

It is over 20 years since pasteurization commenced to get into general use and its merits have been recognized to such an extent by experts and various authorities that, to-day, we have very few statutes, by-laws, or regulations which fail to take note of pasteurization. The majority of the large cities in the United States and a considerable number of smaller cities and towns have adopted compulsory pasteurization. In some cases such action has been brought about by the will of the people, who demanded and obtained protection, not only for themselves, but for their children. In other cases it was brought about by educative measures, backed up by aggressive campaigns, conducted by intelligent authorities who took full advantage of the lessons taught by the sad experiences of other towns and cities; while again, in far too many cases compulsory pasteurization has been introduced as a measure of grim necessity, in order to combat a desperate situation.

In our case, the question is: "Should we tackle this matter now, when we can approach the subject with unbiassed minds, or should we follow a dilatory policy so that, eventually, we may be classed in the third category, or in other words, should we delay locking the stable door until after the horse is gone?"

We may note here that some of the first duties undertaken by the new British Ministry of Health were in connection with milk supply. In the first place special consideration was given and efforts made to encourage nutrition and growth among the children by insuring to such children an adequate supply of milk. Then having established the status of milk as a food, they proceeded to introduce regulations governing the production and grading of milk.

That these people recognize the value of pasteurized milk may be judged from the fact that they allow two classes of Grade A milk, namely:

Grade A Raw—Certified Milk.
Grade A Pasteurized—Scientific Pasteurized Milk.

Taking into account the amount of communicable disease prevailing in this city, the cause of several outbreaks of which cannot be traced, and knowing that raw milk has occasionally been the cause of such outbreaks, we have no means of measuring or estimating the beneficial results which would accrue to our citizens by the introduction of compulsory pasteurization.

Wherever pasteurization has been adopted the benefits have made themselves manifest and in some cases the effect on the general health of the public may be described as startling.

Pasteurization gives to the consumer, a safe milk of uniform quality, delivered in a bottle, protected from any contamination on the route.

Is it any wonder that health authorities, seeking to protect the consumer of milk, should look upon pasteurization as a saver of life, a preserver of health, and the hope of the future?

The Dairy Industry

Approximately 70,000,000 gallons of milk were produced in Manitoba during the year 1919, and it is estimated that somewhere about 25,000 dairy farmers were wholly or partially engaged on the production of milk.

During the same period the citizens of Winnipeg consumed as milk approximately 5,000,000 gallons, that is one fourteenth of the total production. The following table will illustrate just what happened to the 70,000,000 gallons of milk produced on the farms:

	Gallons
Consumed by City of Winnipeg population	5,000,000
Consumed by remainder of the province	10,000,000
Consumed as sweet cream, ice cream, etc	7,000,000
Manufactured into cheese	1,000,000
Manufactured into dairy butter	25,000,000
Manufactured into creamery butter	20,000,000
Fed to young calves, etc	2,000,000
	70,000,000

From the above, it may be deduced that enough milk is manufactured into butter, cheese, ice cream, etc. to supply ten cities with an equivalent quantity of domestic milk as that consumed in the city of Winnipeg.

From information published under authority of The Honorable Minister of Agriculture, we find that approximately 19,000,000 pounds of butter were manufactured in Manitoba in 1919 of which 150 carloads or something less than 4,000,000 pounds were exported. On the assumption that the amount on hand at the end of the year would come somewhere near the balance on hand at the commencement of the year, we may calculate that 15,000,000 pounds represents the consumption for the total province and dividing this on the same basis as milk we find that 5,000,000 pounds represents the annual butter consumption for the city. Thus based on a supposed population of 200,000 the annual per capita allowance of milk and butter would be 25 gallons and 25 pounds respectively, or one pound of butter for each gallon of milk consumed.

It is evident that our domestic milk consumption represents approximately one fifth of the total milk required to provide us with all dairy products which means that for each cow utilized to provide us with milk, the services of four more cows are required to supply us with butter, sweet cream, ice cream and cheese. This is an approximate calculation and for this purpose the use of condensed and evaporated milk, fancy and imported cheese, milk powders, etc., have been ignored, although they would be a factor to receive consideration if anything more than an approximation were desired.

It would require a total of 50,000 cows each giving 5,000 pounds of milk per annum to keep us supplied with dairy products, that is, one good cow for each four inhabitants. In view of the low average production of our Manitoba cows it is more probable that it requires the united efforts of over 60,000 cows in order that our requirements may be satisfied.

City Creameries

The six firms, manufacturing butter inside the city, turned out something less than 2,000,000 pounds during the year. They have to meet stiff competition from the small creameries located at country points, but while the rural creamery has an advantage in being on the job close to the point of production yet the city creameries have the advantage in the shape of cheap power and good water, along with drainage facilities which are very seldom attainable in the country, so that it is very improbable that the butter making business would drift to the country.

Recommendations

A safe policy for the future.

All milk for domestic purposes to be either pasteurized or certified, and delivered to the consumer in bottles or some other final container.

No milk to be dipped or poured at any time during delivery to the customer.

A straight defined by-law outlined along these principles would give us an opportunity of placing our milk supply on a par with that of the best American and Canadian cities and would be in keeping with that progressive spirit which has kept our city in the foreground of commercial and industrial expansion.

In view of the fact that the milk question has received so much attention during the past year: It has been discussed, criticised and debated from various angles by producers, distributors, and consumers and some very erratic opinions have been expressed. We have been threatened with milk famines and informed that producers would refuse to produce or refuse to ship, that heifer calves would be vealed and dairy cows sent to the block, that dairy herds were being sold out and dispersed and in fact that milk production was going "to the dogs." It is because of this agitation that I have endeavored to, as concisely as possible, cover every phase of the situation in this report.

The average citizen has no idea of the immensity and intricacies of the machine in control of milk production and that small things like those mentioned would have little if any effect on the running of the machine.

The dairy industry is firmly established on a solid economic foundation and we may rest assured that our provincial authorities as exemplified in the Department of Agriculture and the Dairy Commissioner in particular will not allow the child they have nursed and reared, to go astray.

In conclusion, I would suggest that, in view of the vital interest which the whole question of milk production and the Dairy industry has to our citizens, that the dissemination of some form of propaganda tending to encourage development and expansion would be of benefit to the entire community, but to the citizen consumer in particular.

I have the honor to be, Sir,

Your obedient servant,

E. C. BROWN,
Chief Dairy Inspector.

DAIRY INSPECTION, 1919

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inspections —													
Cow keepers	34	35	23	26	27		22	1	1	1		8	178
Licensed dairies	84	83	81	78	77	26	97	89	114	95	73	107	1004
Farm shippers	46	32	54	52	34	15	74	42	57	56	24	33	519
Milk depots	77	75	77	79	75	428	69	52	62	70	86	74	1224
Stores, restaurants	108	87	99	100	98	22	111	66			46	63	800
Vehicles	112	136	143	150	108	43	156	71	86	108	70	185	1368
Special	10	11	10	16	15	6	30	9	10	17	32	64	230
Total	471	459	487	501	434	540	559	330	330	347	331	534	5323
Samples—													
Milk for analysis	53	51	55	58	36	4	98	50	18	17	34	56	530
Cream analysis	8	7	2	4	5		9	3	3	1	8	5	55
Milk for bact. count				5		1						9	15
Sediment test.			2		31	7	18		38	28		17	141
Water				2					2				4
Total	61	58	59	69	72	12	125	53	61	46	42	87	745

DAIRY INSPECTION, 1919—Continued

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Notices	28	40	62	206	108		133	63	20	51	74	78	863
Sickness investigated..	10	5	2	2	1 Epi.		1 Epi.			2	1	2	31
Communicable diseases	10	5	2	1	6								19
Dairies closed...............					1			1		1			3
Cows tuberculin tested	135	27	19	24	3		17	11		65	119	27	447
Reactors condemned............	12	5	17	4	0		3	2		2	19	4	68
Milk condemned, lbs................		160	320	180	160			320	320	2065	160		3685
Cream condemned, lbs.........							406		250	50			706
Police court Cases—													
Watered milk..................		1	1		1		1	1				1	6
Milk below standard			1	1							2	3	7
Cream below standard......		1									1		2
Vendor without license.....										5			5
Refusing sample			1									1	2
Total prosecutions		2	3	1	1		1	1		5	3	5	22
Convictions		2	3	1	1		1	1		5	3	5	22
Fines.....		$60.00	$70.00	$10.00	$10.00		$10.00	$10.00		$22.00	$25.00	$45.00	$262.00
Costs....		4.70	7.05	2.35	2.35		2.35	2.35		11.75	7.05	11.75	51.70
Total		64.70	77.05	12.35	12.35		12.35	12.35		33.75	32.05	56.75	$313.70

REPORT OF CHIEF FOOD INSPECTOR

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I herewith beg to submit report of the activities of the Food Inspection Division during the year 1919. During the year the inspectors made, 20,989 inspections of premises where food is stored, prepared or offered for sale.

One can hardly make a report of the past year without referring to that unfortunate period known as "during the strike." Coming as it did in May when we expected to get the maximum of improvements done preparatory to the issuance of licenses in June, it totally disorganized the work, so far as any improvement was concerned, for a considerable length of time.

In spite of this untoward condition the work has gone on apace, there being an increase of 56 buildings under inspection, over last year, and an increase of new plumbing installed and places remodelled, due to our activities regarding hotels.

Hotels

Previously the hotels were inspected and licensed by the Provincial Government, but with the passing of the Prohibition Act, supervision ceased and a more or less chaotic condition ensued.

Last February the City Council passed a by-law respecting hotels, requiring them to procure a license, and also providing that, before a license could be procured, a permit must be issued by the Medical Health Officer certifying that the premises were suitable for that purpose. We have therefore been enabled to have installed new plumbing and other equipment necessary to bring the kitchens of these places up-to-date.

Clearing House

As recommended in previous years, one must again indicate the advisability of having some place where all meats not previously inspected by some recognized authority may be brought and submitted for inspection. While probably as much as 95 per cent. of the meat consumed in Winnipeg is from Federal Inspected Abattoirs, the rest is from farmers or one or two small slaughter houses on the outskirts of the city.

Over these the city has no jurisdiction, although they are licensed by the Provincial Government. One of these slaughter-houses last year caused considerable concern because they were in the habit of buying crippled hogs from the stock yards. These cripples are now being taken to an abbatoir where there is Federal Inspection and the slaughter-house previously mentioned has applied for Federal Inspection. While the condition is not serious, one must point out the advisability of having all meat, not previously inspected by some recognized authority, submitted with the heart, lungs and liver for inspection.

Poultry

The conditions under which fowls are killed and dressed at some of the places where poultry is handled, leaves much to be desired.

The conditions are not capable of being regulated at present except by enforceing the regulations pertaining to slaughter-houses, which are too stringent for these cases. Some of these places handle thousands of birds within a few weeks, and one has only to see the manner in which the pickers (generally women), are surrounded by blood and feathers, to say nothing of the possible vermin on the fowl, to recognize the necessity of regulations dealing with this particular phase.

Prosecutions

Fourteen prosecutions for sale of unsound food or keeping insanitary premises were issued and convictions obtained in all but two cases. These two pleaded immunity under Section 135, Clause 4, Public Health Act which provides that "the person charged shall be held guilty unless he prove that he did not know and had no reason to believe that the food was unfit for consumption at the time of sale."

MODERN LIGHT LUNCH COUNTER

Although in one case (a shipment of eggs) it was proved that the eggs had been on the railroad a month, in hot weather, the defendant swore he had no reason to believe the eggs were unsound. The other case was somewhat similar. While the clause was inserted to protect innocent parties to a transaction, it is quite obvious that, where parties take advantage of this clause, it involves proving guilty knowledge, an extremely difficult proceeding.

Condemnations

The amount of food condemned as unfit for consumption was 437,285 lbs., as compared with 206,224 lbs. in 1918. This increase was largely due to the large amount of frozen potatoes and eggs which were rotten, due to the extraordinary conditions and heat which prevailed in May, June and July. While the duty of a Food Inspector is primarily to protect the consumer from unsound food, and this amount bears evidence to the activities of this Department, one fails to view with any degree of equanimity the idea of so much food being wasted.

Allowing for the perishable nature of food and the exigencies of climatic conditions, extreme heat in summer and extreme cold in winter, the idea still prevails that there is much loss which should be preventable. A glance over the reasons for condemnation reveals the fact that fowls are killed with full crops, improperly bled and cooled; carcases of veal are shipped before being properly cooled, thrown into cars and other freight piled on top; carcases of mutton are shipped by freight unwrapped. Dried fruits and flour become "weevily" through lack of appreciation of the danger from the parent moths. Any effort which will prevent food becoming unwholesome obviously provides more food and obviates the necessity for condemnation. With this in view I would respectfully suggest that circulars might be issued showing how steps might be taken to overcome these conditions.

Peddlers

It would be an improvement if this class of men were compelled to have their names placed on vehicles before they could receive a license, as it would lead to better identification in case of complaint.

Staff

In 1913 the work of Food Inspection was carried on by three sub-inspectors and the chief inspector. There were 1,318 places under inspection. The work is now carried on by two sub-inspectors and the chief inspector, and there are 1,400 places under inspection with good prospects of an increase next year. I would beg to suggest that if this increase materializes it may be necessary to add another man in order to keep up with the work. I beg to express my appreciation of the loyal co-operation of Inspectors Foote and Mines throughout a somewhat strenuous year.

Respectfully submitted,

ARTHUR RIGBY,
Chief Food Inspector.

PREMISES UNDER INSPECTION AND IMPROVEMENTS EFFECTED, 1919

Description of Premises	Number under Inspection	New, Modern	Cement Floors	Renovated	New Plumbing	Re-modelled	Closed
Abattoirs and Packing Houses	5				3	3	
Bakeries	35	1		11	4	4	2
Biscuit Factories	1			1			
Breweries	4			1		1	
Butcher Shops	185			23	4	2	1
Butter Rooms	5			2			
Candy Factories	28			12	1	3	
Cold Storage Plants	8			1	1		
Commission and Produce Houses	36			3		1	
Cone Factories	1			1			
Confectioners and Ice Cream Parlours	192	2	1	34	3	10	1
Fish Stores (wholesale)	6			1			
Fruit Stores (wholesale)	17			3			
Grocers (retail)	160	4		15	1	5	
Grocers (wholesale)	24	1		1		1	1
General Food Stores	333	2		36		2	3
Hawkers' Vehicles	105						
Hotel Kitchens	49		8	32	19	9	1
Jam, Pickle and Spice Factories	13	1				1	1
Markets	2						1
Pea-nut Butter Factories	2				1	1	
Restaurants	148		1	78	6	18	
Sausage Factories	16			9	1	1	
Soda Water and Bottling Works	9			3	1		
Tea and Coffee Houses	4	1					
Temperance Bars	11			2		1	5
Yeast Warehouse	1						
Total	1400	12	10	269	45	63	16

FOOD CONDEMNATIONS, 1919

Description	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Beef	65	75	510	55	135		65		917				1,822
Veal		55	234	165	254	680	750	73	53	243		60	2,557
Pork	214	100	54	166	10				160		30	40	774
Mutton											50		50
Poultry	30	50							45	21	259	79	484
Fish	1,500	95	20	1,000	60							55	2,730
Fresh Fruit	1,070	342	450	200	200	10,000	18,000	6,960	510	60	180	250	38,222
Dried Fuits	50	115		45				281	25	35	30	125	706
Jam								16					16
Vegetables			2,170	106,400	16,440	24,100	2,175	600	765	55,670	123,180	200	331,700
Butter	10		38	30	15		60					15	168
Eggs	395	125	110	150	50		18,495	10,068	315	90	239	175	30,212
Candy	15				10		25		45	120	48		263
Biscuits				20			50	20	30	125		208	453
Canned Goods	115	370	260	95	200	1,190		1,680	40	1,035	285		5,270
Sausage	10		15	50	10				200	15			300
Milk and Cream			757	180	160		456	418	570	2,115			4,656
Cereals									11,000		1,325		12,325
Nuts									300	110			410
Pickles	1,360											20	1,380
Tea and Coffee	400			75								80	555
Lard	1,740												1,740
Cones				200									200
Sugar							200					60	260
Pepper												30	30
Totals	6,974	1,327	4,618	108,831	17,544	35,970	40,276	20,116	14,975	59,639	125,626	1,387	437,283

FOOD INSPECTIONS, 1919

Premises	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Butcher shops..	343	304	311	296	286	83	222	192	268	289	289	240	3,123
Restaurants and lunch counters	198	219	189	240	185	98	149	133	172	215	240	222	2,260
Hotel kitchens	12	5	27	34	18		12	20	15	19	24	4	190
Markets	40	40	32	40	30	16	12	25	20	26	3	5	289
Abattoirs and packers	1	....	1			6	1	2	4	3	5	8	31
Hawkers' vehicles	213	214	186	195	190	92	137	196	186	169	164	141	2,083
Grocers (wholesale and retail)	186	153	156	125	159	37	131	137	135	163	116	114	1,612
Commission & produce houses	108	116	83	102	98	33	94	96	74	110	109	71	1,094
Candy factories	35	40	33	27	18	18	25	29	43	44	32	22	366
Fish stores (wholesale and retail	10	10	12	8	6	2	6	5	12	13	14	10	108
Jam, pickle and spice factories	9	4	5	2	5	2	5	6	10	6	4	8	66
Cold storage plants	15	12	8	10	5	2	16	20	18	24	23	18	171
Biscuit factories		2	1	1	1	...	1	..	..	3		..	9
Fruit stores (wholesale and retail	108	105	77	129	132	44	87	114	114	124	112	102	1,248
General stores (food)	359	324	299	296	240	62	272	177	205	271	249	214	2,968
Breweries	7	7	5	4	6	2	6	3	7	4	4	4	59
Confectioners and ice cream stores..	214	197	169	182	162	46	165	112	168	183	154	161	1,913
Cone factories	...	.....	.....	...	1	4	2	1	2	....	....	.	10
Cheese and butter rooms	12	14	15	10	10	1	16	25	20	24	25	22	194
Railway cars	....	......	6	7	4	23	5	2	3	7	31	4	92

Sausage factories	28	21	20	29	27	8	26	12	36	32	43	29	311
Bakeries	39	42	28	34	27	20	35	29	25	43	49	38	409
Bakers' vehicles	162	156	147	153	97	29	104	88	91	118	80	71	1,296
Temperance bars	25	23	19	9	7	3	10	10	11	8	7	2	134
Special	76	74	68	102	60	37	44	64	64	95	80	189	953
Totals	2,200	2,082	1,897	2,035	1,774	668	1,583	1,498	1,703	1,993	1,857	1,699	20,989
Notices to improve conditions	136	127	142	275	107	70	142	129	122	150	149	86	1,635

PROSECUTIONS, 1919

For insanitary premises	1	1		1					1				4
For unsound food		3	1	1				1	2			2	10
For exposing food to contamination													
For no permits													
Amount of fines	$5.00	$40.00	$25.00	$10.00				$5.00	$60.00				$145.00
Amount of costs	2.35	7.05	15.60	2.35				2.35	7.05			$2.35	39.10

BACTERIOLOGIST'S REPORT

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I beg to submit the following report of the work done in this Bacteriological Laboratory for the year 1919.

It is a little difficult to give a full and interesting report this year as I did not return to my office till May 15th, and I am not fully cognizant of the work that was carried on during the early part of last year and in the four preceding years.

For the last six months nothing of note has occurred to warrant special mention; for instance, there have been no epidemics, such as the Spanish Influenza of last year with its entailed inoculations.

The chief point of interest has been the opening for public use of the new water system from Shoal Lake. As we have not had this in operation for a full year as yet, it seems to me to be unwise to draw conclusions as to its purity or impurity until we are able to have full knowledge of its conditions in all seasons of the year. During the year trouble did arise, but this was due to an accident happening at the intake, after the rectifying of which the water became satisfactory once more. With the above exception, the water has proved to be good, its condition in winter being especially so.

The following is a somewhat detailed account of the various branches of the work.

Water

During the year 443 tests of water were made as follows:

1. Samples of the city water, drawn from the laboratory tap, have been tested daily.

2. Samples, obtained by the City Chemist (Mr. Blackie), from the reservoir and other points in the city.

3. A few samples brought in by private individuals, chiefly obtained from their summer residences. For this work a fee of $5.00 per sample has been charged.

4. Tests have also been made weekly of the water in the Public Swimming Baths to see if it was in as sanitary a condition as is possible.

MILK AND CREAM

In this branch of the work 827 analyses were made as compared with 1,220 last year. This total of 827 was made up as follows:

1. Five hundred and twenty-eight samples of milk and fifty-six of cream were taken officially by the inspectors of the Dairy Division. Of these, it was found that only 5 samples of milk and 1 of cream were below the legal standard. This figure naturally compares most favorably with those of previous years.
2. Seventy-one analyses of milk and 38 of cream were made for the Children's Hospital, and 72 of milk and 32 of cream for the City Bureau of Child Hygiene. These institutions have their own standards for infant feeding.
3. In addition to the foregoing, 23 samples of milk and 7 of cream were made for private individuals.

DIPHTHERIA

A total of 9,527 swabs were examined during the year for Diphtheria. This is about 1,000 less than last year, and this lessening in figures is largely due to the constant supervision of school children by the School Doctors and Nurses, and the consequent elimination of "carriers."

Shorty after my resumption of office, I returned to the old methods of issuing only sterilized swabs for use by practitioners. etc., instead of the little aluminium boxes containing culture media—the latter method proved to be most unsatisfactory.

SPUTA EXAMINATIONS FOR TUBERCLE BACILLI

Nine hundred and twenty specimens were examined and 117 proved to be positive, or a percentage of approximately 12. These figures are about the same as for last year.

SERA TESTS FOR TYPHOID FEVER

One hundred and seventy-two of these tests, with 47 positive, were made. These low figures are particularly gratifying in view of the new source of water supply.

URETHRAL PUS

Three hundred and thirty-four smears were examined, as compared with 302 last year. As the Provincial Board of Health has instituted a Public Clinic for Venereal Diseases, it is likely that the demands for these tests will be diminishing from year to year.

URINALYSES AND MISCELLANEOUS TESTS

Seven hundred and seventy-five analyses of urine were made as compared with 476 last year.

Following the usual custom, it has always been my endeavour to make this laboratory serviceable to the medical profession and public generally, and miscellaneous work such as gastric analyses, human milk analyses, preparation of vaccines, blood counts, etc., has always been undertaken. For this work there are nominal fees, but in no case is a person charged who is unable to pay.

Subjoined is a table comparing the work of the past two years:

	1918	1919
Swabs for Diphtheria	10,959	9,527
Water	400	443
Milk and Cream	1,220	827
Sputa for Tubercle Bacilli	1,075	920
Sera Tests for Typhoid Fever	182	172
Urinalyses	476	775
Urethral pus	302	334
Miscellaneous	52	63
Totals	14,666	13,061

Yours faithfully,

J. H. LEEMING, M.D.,
City Bacteriologist.

REPORT OF DENTAL CLINIC, 1919

Date	Appointments	New Patients	Ward Patients	Extractions	General Anaesthetic	Treatments	Amalgun Fillings	Prescriptions	X-Ray	Dentures	Prophalaxis	Cement Fillings	Impressions	Bites	Repair
January	133	89	79	203	8	91	6	43	13	18	29				
February	150	115	71	271	6	66	3	36	10	22	23	3			
March	173	131	84	441	7	75	1	38	10	23	29	2		....	...
April	168	105	45	467	9	70		27	12	7	28	6		..	.
May	155	74	30	298	7	63	..	44	10	12	35	1		.	.
June	72	101	35	180	5	166	2	43	10	4	33			..	..
July	129	96	25	456	12	57	1	46	5	15	48	.		..	....
August	112	86	35	214	9	51		29	4	15	31	3			...
September	248	67	14	227	1	20		7	1	17	9	11	24	16	....
October	269	72	39	344	8	20		11	5	11	14	7	17	..	17
November	269	56	57	246	4	120		5	5	16	13	21	16	8	...
December	178	40	38	139	3	78	..	8	7	6	3	8	5	4	...
Totals	2,056	1,032	552	3,486	79	877	13	307	92	166	295	62	62	28	17

REPORT OF DIVISION OF COMMUNICABLE DISEASES

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit report of work done by this division during the year ending December 31, 1919.

The year has been a busy one, and while the total visits are not as high as those of 1918, nevertheless a great deal more work was necessary in that Scarlet Fever was the outstanding disease we had to contend with.

The outbreak of influenza which gave the department considerable concern from October, 1918, to January, 1919, reappeared in milder form from early in March, subsiding the following month. During the periods when excessive numbers of cases were reported we received assistance from the sanitary branch.

Inspectors of this division were called upon to combat a milk borne outbreak of scarlet fever during the month of May. The quarantines resulting from this outbreak were carried on well into the month of June and entailed a lot of extra inspection work.

Coupled with this we were continually meeting with an increased number of cases in the north end; the type was extremely mild, many unrecognized cases were recorded, thus rendering conditions most favorable to its spread.

There was no change of personnel in this division during 1919. Inspectors and office staff have frequently been called upon to work overtime and at high pressure; nevertheless they have given their services in a diligent and cheerful manner.

The number of visits recorded for the year is 10,731, against 12,787 in 1918. Again it may be said that this is not the total number of calls made to carry on the work of this division, as the calls made by inspectors of the sanitary division are not registered on this summary.

Houses placed in quarantine totalled 3,802, against 7,334 in 1918.

Quarantine inspections totalled 1,872—over four times the number made during 1918. This is always necessary when scarlet fever is prevalent.

Other calls totalled 4,362. This is a big increase over the calls made under this heading during 1918, when the total was 3,506. Many of these calls are the result of school nurses reports of cases, or suspect cases of communicable disease existing in homes of scholars, anonymous reports, taking swabs, visiting contacts and all calls for which there is no heading in the summary.

Forty-six houses were fumigated and 2,251 rooms, against 57 and 1,405 respectively in 1918.

There were 204 special reports, such reports generally having a bearing on investigation and other special features in the work.

Fifty-four reports on sanitary defects were referred to the division of sanitary inspection for attention.

Tuberculosis Visiting Nurses

Four visiting nurses have been employed in this work throughout the year. Their efforts have been directed along similar lines of the preceding year. The number of visits made total 6,770, as compared with 6,633 for 1918.

Hospital accommodation for advanced cases has been difficult to obtain at times and in this way extra work is placed on the nurse, whose place it is often to make the patient comfortable in the home until such accommodation can be had.

Of the 315 cases of tuberculosis recorded with this Department, 224 were added to the nurses visiting list, against 200 in 1918. Calls on behalf of patients have been comparatively few, while calls other than what is listed on the summary totalled 66.

There was considerable falling off in cases going to hospital and sanitorium through our records. This, however, does not include old cases.

The clinic held at the Winnipeg General Hospital was well attended throughout the year, there being a total attendance of 1,055, against 841 for 1918. New patients totalled 207, against

259 in 1918. This is the second year a reduction in new cases, presented for examination, has been recorded.

There was a total of 117 persons who received milk throughout the year. This supply is given gratis by the city. The amount distributed was 16,945 quarts.

Through the funds of the Anti-Tuberculosis Society, free outfits were supplied to patients sent to Ninette Sanitorium. Bedding, clothing, boots and many garments were supplied to patients and families of patients from this fund, ordinary relief being attended to by the Social Welfare Commission. The assistance rendered by these bodies to patients and homes where the patient is often the bread winner is much appreciated.

Respectfully submitted,

W. J. T. Watt,
Chief, Division of Communicable Diseases

TUBERCULOSIS NURSES' REPORT, 1919

	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS	
													1919	1918
Number of visits	532	565	668	689	376	416	382	630	702	548	638	624	6,770	6,633
To old cases	494	497	598	640	352	395	323	593	653	520	610	593	6,268	6,059
To new cases	6	43	43	24	12	12	9	12	25	11	13	14	224	200
On behalf of patients	8	23	21	16	9	10	6	16	22	11	11	14	167	302
Other calls	24	2	6	9	5	1	2	3	2	6	4	2	66	52
Patients sent to K.E.H.		4	2	6		1	4	1	1		1	2	22	45
Patients sent to Ninette		1	1		6			1	4	7			14	27
Free transportation		...			2			1		1				--
T.B. clinic, old cases	86	60	101	80	42	32	39	67	80	87	96	78	848	582
New cases	22	20	32	14	11	4	10	20	15	17	13	29	207	259

COMMUNICABLE DISEASES INSPECTOR'S REPORT, 1919

	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS	
													1919	1918
Number of visits	796	561	953	716	1330	1312	575	572	1017	1170	1020	709	10,731	12,787
Houses Quarantined	597	158	534	230	243	265	132	184	310	385	367	397	3,802	7,334
Quarantines raised	19	20	30	46	67	107	57	24	47	66	85	93	661	1,259
Quarantines inspected	23	19	41	124	329	226	144	100	220	278	217	151	1,872	402
Other calls	157	200	348	317	689	744	245	264	440	341	351	266	4,362	3,506
New cases investigated	891	346	994	302	319	285	166	215	323	552	471	549	5,413	7,294
Rooms fumigated	105	81	108	125	205	158	143	109	244	308	325	340	2,251	1,405
Houses fumigated	1		4	6	2	7	4	4	2	7	7	2	46	57
Special reports	2		3	6	17	5	15	14	22	49	32	39	204	115
Sanitary defects reported	2	3	7	3	10	4	3	5		3	8	6	54	41

SCHOOL NOTICES—COMMUNICABLE DISEASES, 1919.

Schools	Smallpox	Chickenpox	Measles	Scarlet Fever	Whooping Cough	Mumps	Diphtheria
WARD 1							
Earl Grey		11		13	2	1	32
Fort Rouge		3		1	1		8
Gladstone		8	1	4			10
Kelvin		1		5			10
La Verandrye		11		8			7
Lord Roberts		6		3	4		6
Riverview		2		7	6		6
St. Mary's Academy					1		2
WARD 2.							
Alexander				7			3
Carlton			1	9			7
Isbister		1		16	2		8
St. Mary's		2		2			7
Manitoba University		1		3			9
Success Business Collage				1			4
Dominion Business College							2
Havergal College			1				2
WARD 3							
Greenway		12		22		1	9
Isaac Brock		5	1	14	2	1	20
John M. King		11		18	2		15
Laura Secord		9	2	9	3		6
Mulvey		2	1	16	6		8
Principal Sparling		2	10	3			5
St. Edwards		1	6				1
Wellington		7		7	8		20
WARD 4							
Albert		17		9	5	10	16
Argyle				3			6
Dufferin				3			6
Kindergarten		1		1			3
Maple Leaf		1		10	3	1	2
Normal				5			4
Pinkham		6		13	4	1	6
Cecil Rhodes		3		52	8		10
Somerset		1		7	12	2	14
Victoria		4	1	22	3		14
Model		3					6
WARD 5							
Aberdeen	1	14	3	71	10		87
McPhillips							2
Norquay		2		25	3		17
Wm. Whyte		27	1	62	2		14
Lord Nelson				6	3		4
King Edward		15	1	69	2		47
Hebrew Free		1		3			5
Immaculate Conception				8	1		8

SCHOOL NOTICES—COMMUNICABLE DISEASES, 1919—Continued

Schools	Smallpox	Chickenpox	Measles	Scarlet Fever	Whooping Cough	Mumps	Diphtheria
WARD 6							
Andrews		4	8	24	9	.	29
Luxton		15	1	25	3		18
Machray		15	2	32	8	.	35
Strathcona	.	7	1	70	5		27
Holy Ghost		.		2		.	2
St. John's Technical		10	2	43	1		33
WARD 7							
Elmwood		1	..	.	3		..
George V				8	14		17
Lord Selkirk		13	....	24	2		21

BUREAU OF CHILD HYGIENE

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I submit herewith the report of the Bureau of Child Hygiene for the year of 1919.

Child Welfare Nurses

During the year, three nurses were added to the Bureau, making a total of twelve, eleven of whom form the visiting staff.

Nurse Attrill, who served with distinction on several fronts with the C.E.F. and received the Royal Red Cross and Mons Star decorations, returned to duty in October after five years war service. Nurse Maddin was also released from military service and returned to duty in July.

During the year the Child Welfare Nurses made 29,569 visits and gave 921 treatments. New born babies, numbering 2,742, were visited and these will be retained on the visiting lists until they reach two years of age. Other particulars of the nurses' work are shown in the table at the end of the report.

Records

Formerly, infant mortality records were tabulated for the city as a whole and it was not possible to know, except in a general way, which sections suffered most heavily. In order to learn definitely the status of infant welfare in the several sections of the city, the nurses' districts were re-arranged and a new system of records instituted, both for the nurses and the depot, which in conjunction with the birth and death records similarly tabulated, will enable me to direct more effectively the work of the visiting nurses.

A brief outline of the system is as follows: The births, as registered, are divided into seven wards and a condensed summary, containing the essential information regarding each, is typed in loose-leaf registers, there being one register for each ward.

The visiting nurses enter against each birth the dates of visits and conditions found, and also record treatments in hospital, visits to the babies' clinic, cases receiving feedings from the dispensary, etc. The mortality records are also entered in the register, so that it is possible to learn:

(*a*) The number of births in each district;
(*b*) The proportion of births visited by the nurses;
(*c*) The proportion of cases added to the visiting list;
(*d*) Attendance at the babies' clinic from each district;
(*e*) Proportion of cases receiving dispensary feedings;
(*f*) Infant mortality by cause, age, etc.;
(*g*) Special information re midwives, hospitalization, nationality of parents, etc.

At the request of the Victorian Order of Nurses, arrangements were made in the Fall to enable their nurses in training to take a course of child welfare, visiting with our staff, and this has been continued. The Kindergarten also requested the Bureau to examine the children in their institution each month.

We are glad to be able to co-operate with other welfare agencies in this manner and the policy is one which should result in mutual benefit.

BABIES' CLINIC

The city suffered a most grievous loss in the death of Dr. E. Richardson, who died on December 1st from pneumonia. Dr. Richardson was one of the attending physicians at the clinic from its inauguration by the Ladies' Service League, prior to the city's taking the work over in 1914, and for many years gave freely of his services and time for the benefit of Winnipeg babies. He has been greatly missed by the mothers who were wont to attend the clinic, his kindly manner and skilful treatment having won for him the deepest gratitude of all.

During the year 4,512 examinations of babies were made by the physicians at the daily clinics, and 518 cases were added to the dispensary list to receive modified feedings.

The success attending the treatments of Drs. Rorke and Richardson has been most marked and the benefits resulting from the clinics have been inestimable. With the new record system, now in operation, it will be possible in future to present definite figures regarding the mortality among infants attending the clinics or receiving modified feedings.

There has been recently as many as 37 attendants in a morning at the clinic, a number which is in excess of our present accommodation and if the increase continues it will be necessary to provide larger quarters.

Milk Depot Dispensary

A total of 40,392 feedings were prepared in the dispensary against 50,391 in 1918. The reduction is partly due to there being fewer births, but mainly to circumstances beyond our control. The average number of feedings was 112 daily. Although there were fewer feedings dispensed, the cash collected amounted to $3,603.34, an average of over $300.00 per month, the same as for 1918, when I put in operation the new cash system. The policy I have adopted is to encourage payment for the feedings as far as possible, and there is a very great reduction in the number of free feedings now prepared. The fees range from 10 cents to 25 cents a day, and 1919 shows an average of 8.92 cents collected per feeding, whereas the previous years' averages ranged from 2.35 cents per feeding in 1915 to 4.83 cents in 1917.

Considerable difficulty was experienced in cooling the feedings during the Summer with the new Shoal Lake water, owing to its temperature being over 20 degrees higher than the old artesian well water, necessitating a large increase in the quantity of ice used and hampering the staff at its busiest season. To overcome this I recommended the installation of a refrigeration plant, which is now being installed, the recommendation having been approved by the Committee on Health.

In December, the Children's Hospital feedings were taken over and prepared by the Depot (at the cost of supplies used), which added considerably to the work. This was the understanding entered into when the city received the present site of the Depot on the Hospital grounds in 1916, and I am pleased that the Bureau is now in a position to carry out its part of the agreement.

Miss A. Graham, a trained dietitian, was appointed to the staff in November and the pupil nurses of the Children's Hospital now receive training in the preparation of feedings in the Depot.

Judging by the number of births and feedings prepared during the first months of 1920, there will be a great increase in the work this year, and, in anticipation, new equipment and apparatus is being installed. It is impossible to prepare in time for delivery to the sub-stations, a great many more feedings than we have at present, and in order to relieve the congestion, mothers, who are capable of preparing the simpler feedings, are being taught to do so by the nurses, thus enabling the dispensary to increase the number of the more complicated and special feedings.

INFANT MORTALITY STATISTICS

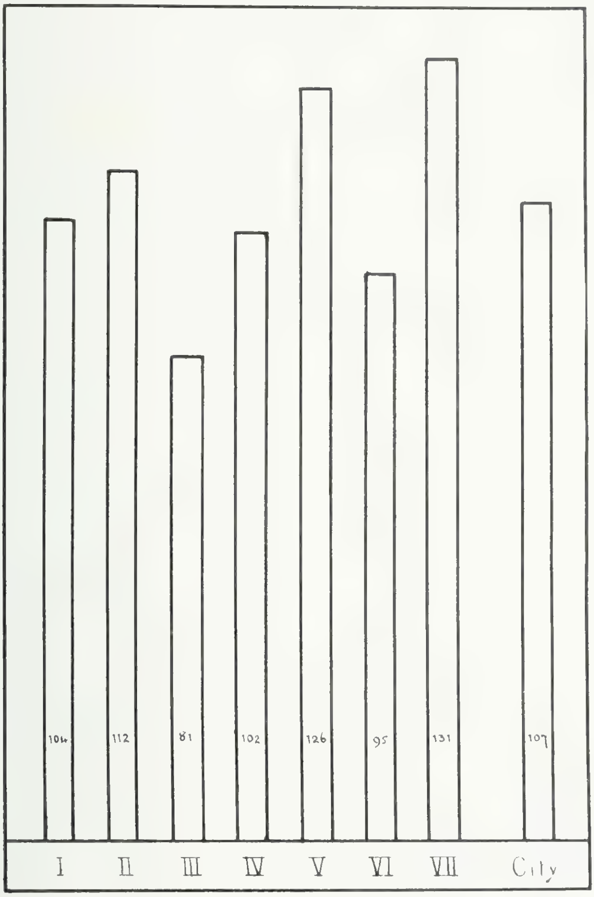
The following are totals for 1919 with those of 1918 for comparison:

	Still-births	Live births	Deaths under one year	Rate per 1000 live births
1919	206	5,254	562	106.9
1918	245	5,621	516	91.8

The increase in the mortality was almost entirely due to the Influenza epidemic, which continued until April, giving a rate for the first four months of 132 deaths per 1,000 live births.

The Summer proved excessively hot, in fact, the meteorological records show it to have been the warmest summer for twenty years. It is with satisfaction, therefore, that I report a rate of 95 deaths per 1,000 live births for the latter eight months of the year, reducing the rate for the whole year to 106.9. In 1912, before the inauguration of the Child Welfare Service, when we had a similarly hot summer, the rate was 199.5 deaths per 1,000 births. Had this rate prevailed in 1919, instead of 562 infant deaths, there would have been 1,050 such deaths.

In order to learn more completely the results attending the Bureau's work, the statistics have been tabulated by wards and the following tables will repay study as they show interesting differences in the figures for the various wards. The charts summarize this information and show along what lines the work in each ward has to be conducted to produce the most effective results.

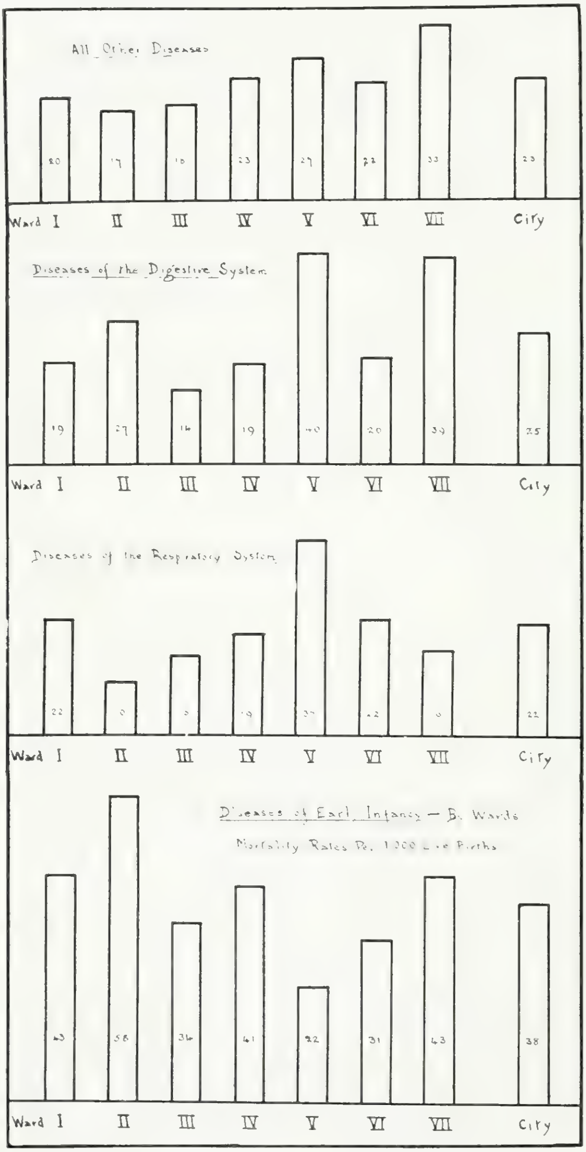


Infantile Mortality Rates per 1,000 Live Births, by Wards, 1919.

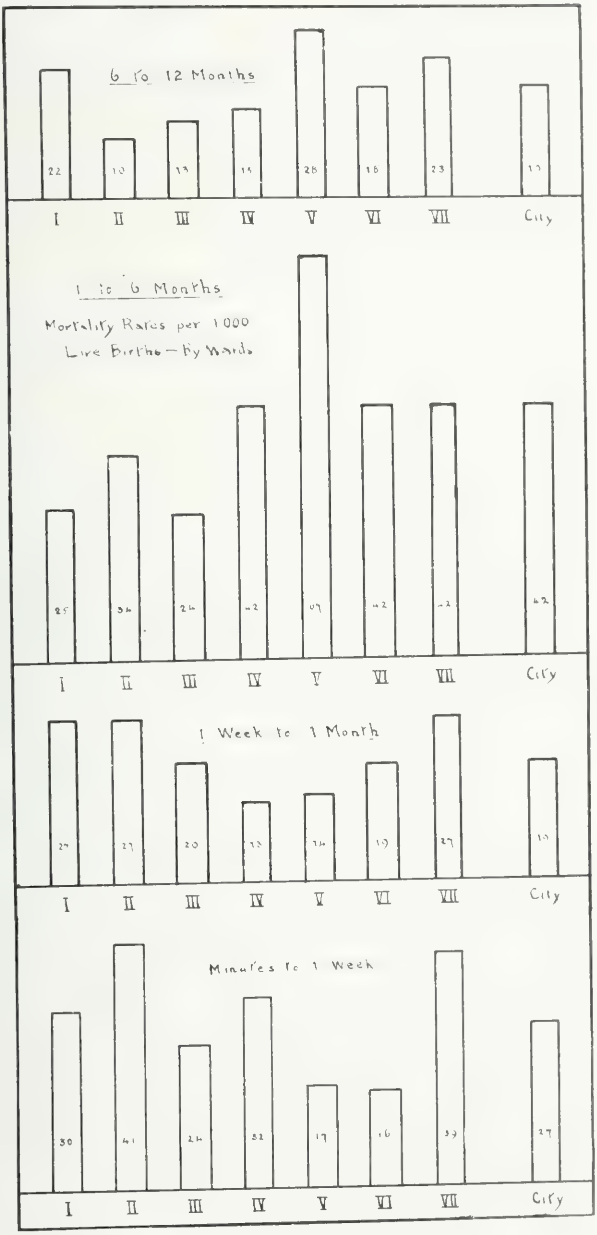
The diagrams on the following two pages show similar columns divided according to *Cause of Death* and *Age at Death*.

Note the variations in the different wards in the latter two diagrams: V and VI contain large foreign-born populations with low death rates during the first month of life, but high mortality from the first to the sixth month, mainly due to improper feeding and pneumonia.

Wards with British populations have high mortality during the first month of the infants' lives, especially noticeable in Ward II, which contains a large rooming-house district with many young couples occupying one and two rooms.



Infantile Mortality by Wards and Cause of Death, 1919
Rates per 1,000 Live Births



Infantile Mortality by Wards and Age at Death, 1919
Rates per 1,000 Live Births

By wards the infant mortality rates are as follows:

	1919	1918
Ward I—Deaths per 1,000 live births	*126	76
Ward II—Deaths per 1,000 live births	112	150
Ward III—Deaths per 1,000 live births	* 91	82
Ward IV—Deaths per 1,000 live births	102	101
Ward V—Deaths per 1,000 live births	126	102
Ward VI—Deaths per 1,000 live births	95	107
Ward VII—Deaths per 1,000 live births	131	58

*See later—Corrected rates: Ward I—104; Ward III—81.

Ward I.—This is the largest ward in the city and is mainly populated by Canadian and British families in good circumstances. One section is principally occupied by foreign born citizens.

There were 24 stillbirths, 634 live births and 80 deaths of infants under one year of age during 1919. Fourteen of the deaths occurred in a children's home which receives children from all parts, so that the correct rate for the ward is 104 deaths per 1,000 live births, a rate considerably in excess of that of 1918.

It is difficult to account for the increase in the mortality in this ward as it is mainly comprised of the better class residential districts where a low mortality usually prevails. The influenza epidemic (January to April), did not affect the ward seriously, the rate for the four months being 108, whereas the rate for the whole city was 132. It was during the latter eight months of the year that the increased mortality occurred, the increase being general over all the causes of death, the ward giving a higher rate for the eight months than the rest of the city.

The rates for the causes of death of the 66 infant decedents resident in the ward, are:

	Deaths per 1,000 live births	
	Ward I	Whole City
Diseases of early infancy	43	38
Diseases of digestive system	19	25
Diseases of respiratory system	22	21
Other diseases	20	23
All causes, 1919	104	107

In all wards where Canadian and British families predominate, diseases of early infancy formed the chief cause of death during 1919, Wards I, II and III being most heavily affected. In Ward I, 41 per cent. of the infant deaths were assigned to this cause; in Ward II, 51 per cent.; in Ward III, 42 per cent. In Ward V, which is principally occupied by our foreign born citizens, only 17 per cent. of the infant deaths were assigned to this cause, but this advantage was completely offset by the high mortality from diseases of the respiratory and digestive systems occurring during the later months of the infants' lives.

The rates for the various age periods are:

	Deaths per 1,000 live births	
	Ward I	Whole City
One week and under	30	27
One month and under	57	46
Three months and under	68	65
Under one year	104	107

The above table bears out the facts pointed out previously, the mortality rate of infants aged one month or less being higher than the average of the whole city.

Ward II.—This, the smallest ward of the city, contains a large boarding and rooming house district, and the Housing Survey revealed that many families with children occupied but one and two rooms. Canadian and British families predominate.

In 1919 there were 17 stillbirths, 294 live births and 33 deaths of infants under one year of age, giving a rate of 112 deaths per 1,000 live births. In 1918, the infantile mortality rate was the highest of all wards, 150 deaths per 1,000 live births against 92 for the city as a whole.

This ward was badly affected by the influenza epidemic, and during the four months January to April, 1919, the infantile mortality rate rose to 244, which means that one infant under one year of age died for every four born during this period, or a mortality twice as heavy as for the rest of the city.

These deaths mainly occurred in infants less than one week old and were due to diseases of early infancy. This classification accounts for 51 per cent. of the mortality in this ward—the highest in the city—and the situation presents a difficult problem as so many factors have a bearing on mortality due to these diseases.

With the increase of the nursing staff it was possible to place one nurse in charge of this district and the latter months of the year show a marked improvement, although it is too early yet to present definite figures.

The rates for the causes of death are:

	Deaths per 1,000 live births	
	Ward II	Whole City
Diseases of early infancy	58	38
Diseases of digestive system	27	25
Diseases of respiratory system	10	21
Other diseases	17	23
All causes, 1919	112	107

The rates for the various age periods are:

	Deaths per 1,000 live births	
	Ward II	Whole City
One week and under	41	27
One month and under	68	46
Three months and under	95	65
Under 12 months	112	107

Ward III.—This is the largest ward in the city and consists mainly of good class residences, with British families predominating. There is also a large section of Icelandic families, amongst whom infantile mortality has always been about half that of the other nationalities.

There were 47 stillbirths, 1,103 live births and 100 deaths of infants under one year, giving a rate of 91 deaths per 1,000 live births. Eleven of these deaths were of infants whose mothers were temporarily residing at a maternity hospital, so that the corrected rate is 81 deaths per 1,000 live births, the lowest of the ward rates and 26 points below the rate for the whole city.

This ward had also the lowest mortality during the influenza epidemic—a rate of 100 against 132 for the city—and the last eight months of the year give a rate of only 71 deaths per 1,000 live births.

The rates for the various causes of death for the year are:

	Deaths per 1,000 live births	
	Ward III	Whole City
Diseases of early infancy	34	38
Diseases of digestive system	14	25
Diseases of respiratory system	15	21
Other diseases	18	23
All causes, 1919	81	107

Deaths from diseases of the respiratory system were low in this ward, as in the other wards where British predominate, and diseases of early infancy are the chief problem to be contended with, although this rate is low compared with those of some other wards.

The rates for the various age periods are:

	Deaths per 1,000 live births	
	Ward III	Whole City
One week and under	24	27
One month and under	44	46
Three months and under	59	65
Under 12 months	81	107

The contrast between the rates for this ward and Ward II (both populated mainly by Canadian and British born citizens) is striking, Ward II showing 31 more deaths per 1,000 births than Ward III. Ward II is principally a rooming house district, whereas a great number of families in Ward III own their own houses and there is little overcrowding. In the Housing Survey very few families were found living in one or two rooms.

Ward IV.—This ward contains some of the oldest buildings in the city and the eastern portion is being rapidly converted into business premises.

The population is of a mixed character, but British predominate; the majority of families own their own homes and there is little overcrowding.

There were 27 stillbirths, 617 births and 63 deaths of infants under one year of age, giving a rate of 102 deaths per 1,000 live births, the same as for 1918.

From January to April (influenza epidemic), the deaths were 133 per 1,000 live births, the same as the average for the city, but the latter eight months show a rate of 89, a few points below the city's average, which is a good showing and has not been achieved in this ward before.

The rates for the year for the various causes of death are:

	Deaths per 1,000 live births	
	Ward IV	Whole City
Diseases of early infancy	41	38
Diseases of digestive system	19	25
Diseases of respiratory system	19	21
Other diseases	23	23
All causes, 1919	102	107

Here again the chief problem is the reduction of deaths from diseases of early infancy, these diseases having supplanted diseases of the digestive system as the chief cause of death in this ward.

The rates for the various age periods are:

	Deaths per 1,000 live births	
	Ward IV	Whole City
One week and under	32	27
One month and under	45	46
Three months and under	64	65
Under 12 months	102	107

Ward V.—This is a ward mainly favored by our foreign-born citizens and it is here that the greatest reduction in infantilē mortality has taken place. A fruitful field for education is open to the nurses and it is found that information is, on the whole, sought for and acted upon.

In 1919 there were 26 stillbirths, 830 live births and 105 deaths of infants under one year of age, giving a rate of 126 deaths per 1,000 live births, against 102 for 1918.

The problems confronting the visiting nurses here are of a different nature to those of the other wards, as the children born are strong and healthy, with a consequent lower death rate from diseases of early infancy. It is not until the infants have reached two months of age that the excessive mortality (as compared with the other wards) begins.

The rates for the causes of death differ considerably from those of the other wards. Diarrheal diseases and diseases of the respiratory system cause the bulk of the deaths, and, while the former is controllable and has been greatly reduced, the latter cause is very difficult to overcome as the residents have a decided antipathy to the fresh air doctrine, so that the deaths from the "foul air diseases" in this ward alone form about 30 per cent. of the infantile deaths in the city from these diseases.

	Deaths per 1,000 live births	
	Ward V	Whole City
Diseases of early infancy	22	38
Diseases of digestive system	40	25
Diseases of respiratory system	37	21
Other diseases	27	23
All causes, 1919	126	107

The rates for the different age periods are:

	Deaths per 1,000 live births	
	Ward V	Whole City
One week and under	17	27
One month and under	31	46
Three months and under	60	65
Under 12 months	126	107

The above tables provide interesting comparisons with those for the other wards and clearly indicate the lines along which it is necessary for the Bureau to concentrate its attention.

Ward VI.—The population in this ward is of mixed nationalities, the foreign-born citizens occupying the portion adjoining

Ward V, with Canadian and British families in the northern half. The spot map of the deaths clearly shows that there is a preponderence of deaths in the foreign-born section, and a much lower mortality in the remaining section. The ward as a whole gives a rate of 95 deaths per 1,000 live births against 107 for the city, a rate which is remarkably good for this ward, being the lowest yet attained.

There were 22 stillbirths, 778 live births, and 74 deaths of infants under one year of age.

Influenza left the ward with an infantile mortality rate of 124 deaths per 1,000 births for the four months, January to April, which was lower than the rate for the city as a whole, and this was bettered in the succeeding eight months, the rate being 83 deaths per 1,000 births, or 12 points below the city's rate.

The rates for the year for the various causes are:

	Deaths per 1,000 live births	
	Ward VI	Whole City
Diseases of early infancy	31	38
Diseases of digestive system	20	25
Diseases of respiratory system	22	21
Other diseases	22	23
All causes, 1919	95	107

In this ward the high mortality during the first month amongst the infants born of Canadian and British mothers is counterbalanced by the low mortality during the first month among the infants of foreign-born mothers, but that the mortality after the third month amongst the latter has been reduced is demonstrated by the fact that the rate for the ward is 12 points lower for 1919 than for 1918.

The rates for the various age periods are:

	Deaths per 1,000 live births	
	Ward VI	Whole City
One week and under	16	27
One month and under	35	46
Three months and under	49	65
Under 12 months	95	107

In this ward the excessive mortality (as compared with the other wards) began when the infants reached their fourth month, Wards V and VI beng similar as regards the low mortality rates during the first few months after birth.

Ward VII.—This ward also comprises two sections, Canadian and British-born predominating in the western half and foreign-born citizens occupying the eastern half.

There were in 1919, 12 stillbirths, 305 live births, and 40 deaths of infants under one year, giving a rate of 131 deaths per 1,000 live births. This is a large increase over 1918, when the rate was the lowest for the city, viz., 58, and was mainly due to the influenza epidemic, the first four months of 1919 giving a rate of 158. In the latter eight months, the rate continued high due to diseases of the digestive system which accounted for 57 deaths per 1,000 live births against 29 for the whole city. This is exceptionally high for this ward, and occurred mainly amongst British families.

The rates for the various causes of death for the year are:

	Deaths per 1,000 live births	
	Ward VII	Whole City
Diseases of early infancy	43	38
Diseases of digestive system	39	25
Diseases of respiratory system	16	21
Other diseases	33	23
All causes, 1919	131	107

The rates for the various age periods are:

	Deaths per 1,000 live births	
	Ward VII	Whole City
One week and under	39	27
One month and under	66	46
Three months and under	79	65
Under 12 months	131	107

The above table shows the excessive mortality in infants aged over three months, due mainly to diarrheal diseases.

RECOMMENDATIONS

On reviewing the work of the Bureau for the past years and studying the birth and death statistics, I am convinced that the educational work of the nurses in the homes is of the greatest importance, and recommend that at least two additional nurses be appointed to the staff to cope with the large increase in births which is to be expected this year. The high infant mortality shown by Ward II in 1918 (150 deaths per 1,000 live births), points out clearly the danger of overcrowding and the necessity of having a nurse constantly at work in those districts where congestion is at its worst.

The results of the nurses' visiting is shown by the greatly increased number of mothers continuing natural feeding until the baby is well past the danger period. Nurse Attrill, who, before entering military service five years ago, was one of the four nurses who then comprised the staff, reports on the splendid spirit of co-operation and noticeable improvement in the care of babies which has developed amongst the foreign-born mothers during her absence.

The problem of prenatal care and instruction is the most vital at present and presents the greatest difficulties. Personally, I feel that a clinic should be held at the Depot one or two afternoons a week, with an attending physician to examine and advise expectant mothers. The nurses report considerable reticence on the part of expectant mothers to consult them, even after having visited the families regularly; but this feature is gradually being overcome as the mothers learn the importance of prenatal care.

I am of the opinion that, with the changes now being made in the dispensary, it will be possible to carry on the preparation of feedings for the coming year or two, but within the next few years it will be necessary to erect a Milk Depot in the southern part of the city, the best location being, I believe, near Portage Avenue and Sherbrooke Street.

CONCLUSION

Mr. P. B. Tustin, who was manager of the Bureau since its inception in 1914, left the department in May on leave of absence and resigned late in the year to take a position in London, England. The staff unites in wishing him every success in his new sphere of work.

I wish to place on record my appreciation of the splendid work performed by the nursing and dispensary staffs during the past year. The nurses have given their private time to attend sick babies whenever called upon and their devotion to duty has contributed in a large measure to the success of the Bureau's work. Each nurse has charge of her own district and duly appreciates the responsibility.

Respectfully submitted,

A. G. Lawrence,
Manager, Bureau of Child Hygiene.

BABIES' MILK DEPOT REPORT FOR YEAR 1919

1919	Babies Examined	Cases Dispensed for First Time	No. OF CASES AND FEEDINGS							CASH	FEEDINGS			SUPPLIES USED									
			Cases on dispensary list on 1st of month	Cases added during month	Cases discontinued during month	Total Feedings	Charity feedings	Patriotic feedings	Paid feedings	Cash collected	Lactic acid	Whey	Sherry and Peptonized.	Whole Milk (qts.)	Skim Milk (qts.)	Cream (qts.)	Rennet (pts.)	Powdered sugar (lbs.)	Sugar of Milk (lbs.)	Barley flour (lbs.)	Scotch oatmeal (lbs.)	Dextro maltose	Proteid
January	289	40	117	6	41	3571	224	453	2894	$ 308.25	219	185	14	1926	954	108	½	180	31	62	46½	....	
February	280	50	122	6	39	3364	184	382	2808	300.00	183	167	5	1674	844	77	½	153	33	56	45		
March	301	32	117	7	39	3877	179	365	3433	291.10	191	102		1944	826	85	½	196	46½	65½	62	15½	
April	394	46	129	11	53	3760	159	344	3257	339.50	161	29	11	1900	762	85¾	½	200	55	75	51	10	
May	357	36	131	4	56	3870	170	295	3405	249.55	173	46½	3	2018	806	92	½	200	45	75	45	10	
June	250	23	119	13	71	3011	101	211	2699	245.89	223	2		1812	668	89		170	39½	69½	39½	10	
July	401	54	75	14	37	2776	78	186	2512	319.30	363	2	9	1308	606	62		150	31	55	30	12	
August	475	66	95	13	85	3316	93	186	3034	286.80	794	9	12	1224	1118	87¾		130	31½	77½	31	15	
Sept	499	58	89	12	58	2758	325	312	2121	339.75	604	7	16	1280	862	55		117	30	75	15	27	42
October	554	49	104	7	47	3469	511	394	2564	291.15	340	27	31	1438	854	60	1	101¼	31	77½	15½	56	157
Nov	381	27	112	8	35	3258	528	392	2338	301.20	273	82	30	1627	682	60	1	87¾	26	67	15	42	157
Dec.	331	37	134	7	45	3362	460	340	2562	330.85	503	71	9	1963	950	60	1	108	40	64	15½	41	55
Totals	4512	518	*112	108	606	40392	3012	3860	33627	$ 3603.34	4027	729½	140	20114	9932	921½	5½	1793	439½	819	411	238½	411

*Average.

BUREAU OF CHILD HYGIENE REPORT FOR 1919.

Month	Number of Visits	Number of New Cases	Males	Females	Natural Feeding	Artificial Feeding	Telephone Calls	Mothers' Meetings	Cases referred to Doctors	Cases referred to Milk Depot	Cases referred to Hospital	Cases referred to Charities	Cases referred to M.S.N.M.	Cases referred to Fresh Air Camp	Treatments given	Pre-natal advice given	Clothing supplied	Medicine supplied	Ice supplied	Inspection of Registered Homes	Lectures and Classes
January	2222	226	116	110	191	75	91	1	34	29	26	6	9		131	38	3			5	1
February	1981	204	153	51	173	31	92	3	35	58	17	4	4		67	41	4	1		7	3
March	2091	192	99	93	150	42	150	23	28	23	26	6	5		65	30	3	3		5	23
April	2260	265	135	130	224	41	98	22	24	32	14	10	4		69	37	7			1	22
May	1338	89	44	45	77	12	61	16	8	11	6	4			36	21	3			4	16
June	1214	82	48	34	75	7	25	2	15	11	6	4	2		28	31	2				
July	2773	298	141	157	259	39	90		34	38	20	6	2	6	58	47	4	2			
August	3156	280	141	139	219	61	129		22	36	15	7	3		43	42	5	3			
September	2809	271	160	111	239	32	59		28	34	13	1	3		48	45	7	1		1	
October	3385	336	172	164	288	48	101		40	50	21	5	6		108	69	5	1		6	
November	3258	277	132	145	247	30	110	1	51	41	20	9			168	69	14	2		6	1
December	3087	222	117	105	203	19	113	1	43	46	41	6	3		100	54				5	1
Totals	29569	2742	1458	1284	2345	437	1119	69	362	409	225	68	41	6	921	524	57	13		39	67

DISEASES AND AILMENTS

	Infected Breasts	Infected Ears	Infected Eyes	Infected Glands	Infected Umbilicus	Pyelitis	Bronchitis	Pneumonia	Croup	Sore Throat	Mal-nutrition	Rashes	Indigestion	Diarrhoea	Constipation.	Eczema	Rickets	Whooping Cough	Measles	Scarlet Fever	Mumps	Diphtheria	Meningitis	Chickenpox	Hernia	Convulsions	Circumcision	Deaths
January	2	7	8	4	3	1	13	6	1	4	6	13	43	14	31	16		2					1	4	21	3	1	
February	7	10	3	10	5	3	23	3	8	7	2	18	28	5	30	16			1				1	4	10	4	3	4
March	4	6	7	9	3	1	62	21	7	8	3	16	36	16	30	11	3	3			1			3	7	6	1	5
April	6	10	11	5	4		32	12	3	5	4	16	29	9	31	13	1	1	1	1		1		6	14	8	5	4
May	1	3	6	2	1		5	2	1	9		13	16	5	19	11	2					1		5	6	1		2
June	1	1	1	3	2		1	1		6		12	13	17	14	3	2	2						3	2	2	1	1
July	3	5	9	3	1		7	3		8	5	14	39	129	28	12	5	18		3			1	1	9	5	1	2
August		3	4	9	2		3	3		3	4	11	21	126	21	4	11	19		2			2		7	4		7
September	2	5	6	5	4	1	13	4		13	1	12	37	31	23	10	2	21		4				1	8	1	4	2
October	7	10	15	6	29		13	8		29	5	59	46	23	54	7	2	31	1	1		1		1	6	1	2	
November	9	12	16	14	3	1	30	12		26	3	25	41	14	30	9	1	22		5	3	2		7	10	4	2	
December	4	5	11	16	2	1	45	11	2	26	3	26	30	8	37	9	2	13	1	3		2		6	4	2	1	11
Totals	46	77	97	86	59	8	247	86	22	144	36	235	379	397	348	121	31	132	4	19	4	7	5	41	104	41	21	38

STATISTICIAN'S REPORT

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit herewith the report on Vital Statistics for the year 1919.

On January 1st the new Vital Statistics forms, standardized for the Dominion, came into use and we now receive complete type written copies of each birth and death registration on individual forms instead of on the compact, conveniently-handled forms previously used. The change has necessitated considerable extra clerical work and I endeavored to arrange for the Division to use a Hollerith tabulating machine owned by another Department, but this could not conveniently be done.

Cross-checking of births and deaths, clinic records, etc., has been continued, and much assistance was received from the Sanitation Division and Bureau of Child Hygiene in tracing up registrations.

Mr. C. J. Brown, City Clerk and Division Registrar, as heretofore, supplied typewritten copies of the birth and death registrations, and I am indebted to his staff for their assistance, the fullest co-öperation having been maintained throughout the year.

The various tabulations follow, all of which is respectfully submitted.

A. G. Lawrence,
Statistican.

Summary of Statistics

	1919	1918
Area of City—Land, 14,865 acres; water, 422 acres; total, 15,287 acres (23.9 square miles)		
Population, City Assessor's figures	183,378	183,595
Persons per acre of land	12.33	12.35
Natural increase, excess of births over deaths	3,146	2,915
Rate per 1,000 population	17.15	15.88
Stillbirths	206	245
Rate per 1,000 total births	37.7	41.8
Births, excluding stillbirths	5,254	5,621
Rate per 1,000 population	28.65	30.61
Deaths, excluding stillbirths	2,108	2,706
Rate per 1,000 population	11.49	14.74
Infantile mortality, deaths of infants under 1 year	562	516
Rate per 1,000 living births	106.9	91.8
Marriages	2,922	2,070
Rate per 1,000 population	15.93	11.27

GROSS TYPHOID FEVER DEATH RATES PER 100,000 POPULATION

1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
117.5	118.4	95.0	84.6	248.3	222.6	146.5	51.0	40.6	38.4	31.6	17.1	10.8	9.7	7.9	3.5	9.5	8.2	7.6	10.3
Corrected Rate for City											7.9	5.4	4.3	3.9	2.0	7.5	6.0	6.5	7.4

CRUDE DEATH RATES PER 100,000 POPULATION

Year	Population	Tuberculosis of lungs (28)	Tuberculosis, other forms (29-35)	Cancer, all forms (39-45)	Simple meningitis (61)	Cerebral haemorrhage (64)	Organic heart diseases (78-79)	Diseases of the arteries, atheroma, aneurysm, etc. (81)	Acute and chronic bronchitis (89-90)	Pneumonia all forms (91-92)	Appendicitis and typhlitis (108)	Hernia, intestinal obstruction (109)	Acute and chronic nephritis (119-120)	Puerperal deaths (134-140)	External causes (155-186)
1919	183,378	72.0	24.5	73.1	10.9	30.5	64.9	9.8	18.0	105.2	17.4	13.6	33.3	15.3	57.2
1918	183,595	86.6	26.7	80.6	7.6	32.1	71.3	9.3	10.9	117.6	19.1	10.9	38.7	19.1	49.0
1917	182,848	74.4	24.1	62.4	14.2	24.6	65.6	19.7	13.7	114.8	14.2	4.9	31.2	19.7	41.0
1916	200,090	79.5	24.4	63.5	20.5	25.0	66.5	17.5	21.0	129.4	12.5	9.0	29.0	20.5	41.5
1915	201,981	79.2	16.8	48.5	17.3	20.8	54.9	15.3	21.8	91.1	13.4	11.4	28.2	12.9	52.9
1914	203,255	72.8	19.7	44.3	12.8	19.2	48.7	10.3	22.1	93.0	6.4	6.4	28.0	26.1	60.5
1913	184,730	71.4	26.0	51.4	21.6	21.6	64.4	11.9	13.0	109.9	10.3	8.7	35.7	21.1	68.2
1912	166,553	64.8	29.4	49.2	22.8	30.6	72.1	4.8	21.0	168.1	8.4	6.6	39.0	21.0	74.5
1911	151,958	71.0	27.7	46.7	18.4	19.1	55.9	4.6	13.8	138.2	9.2	9.9	36.8	13.8	62.5

ACUTE COMMUNICABLE DISEASES

Cases and Deaths; Mortality per 100 Cases; Case and Death Rates per 100,000 Population

Year	Population	MEASLES					SCARLET FEVER					DIPHTHERIA				
		Cases	Deaths	Mortality per 100 Cases	Case rate	Death rate	Cases	Deaths	Mortality per 100 cases	Case rate	Death rate	Cases	Deaths	Mortality per 100 cases	Case rate	Death rate
1919	183,378	91	2	2.2	49.6	1.1	1148	22	1.9	626.0	12.0	907	46	5.1	494.6	25.1
1918	183,595	1,685	9	.5	917.7	4.9	227	10	4.4	123.6	5.4	1,077	48	4.4	586.6	26.1
1917	182,848	1,115	19	1.7	609.8	10.4	254	5	2.0	138.9	2.7	1,467	68	4.6	802.3	37.2
1916	200,090	3,051	37	1:2	1524.8	18.5	386	17	4.4	192.9	8.5	1,281	50	3.9	640.2	25.0
1915	201,981	2,164	25	1.2	1071.4	12.4	267	2	.7	132.2	1.0	463	44	9.5	229.2	21.8
1914	203,255	2,360	22	.9	1161.1	10.8	600	35	5.8	295.2	17.2	532	52	9.8	261.7	25.6
1913	184,730	361	15	4.1	195.4	8.1	1,288	45	3.5	697.2	24.4	281	34	12.1	152.1	18.4
1912	166,553	2,210	33	1.5	1326.9	19.8	572	59	10.3	343.3	35.4	347	41	11.8	208.3	24.6
1911	151,958	1,051	14	1.3	691.6	9.2	1,030	124	12.0	677.8	81.6	583	79	13.5	383.7	52.0
1910	132,720	1,059	14	1.3	797.9	10.5	907	93	10.3	683.4	70.1	270	23	8.5	203.4	17.3
1909	122,390	719	8	1.1	587.5	6.5	233	8	3.4	190.4	6.5	118	13	11.0	96.4	10.6
		WHOOPING COUGH					MEASLES, SCARLET FEVER DIPHTHERIA AND WHOOPING COUGH					TYPHOID FEVER				
1919	183,378	539	19	3.5	293.9	10.4	2,685	89	3.31	1464.2	48.5	150	19	12.7	76.3	10.3
1918	183,595	582	16	2.7	317.0	8.7	3,571	83	2.32	1945.0	45.2	140	14	10.0	76.2	7.6
1917	182,848	329	19	5.8	180.0	10.4	3,165	111	3.51	1730.9	60.7	136	15	11.0	74.4	8.2
1916	200,090	602	27	4.5	300.8	13.5	5,320	131	2.46	2658.8	65.5	123	19	15.4	61.5	9.5
1915	201,981	115	13	11.3	56.9	6.4	3,009	84	2.79	1489.7	41.6	115	7	6.1	56.9	3.5
1914	203,255	109	22	20.2	53.6	10.8	3,601	131	3.64	1771.6	64.4	137	16	11.7	67.4	7.9
1913	184,730	57	19	33.3	30.9	10.3	1,987	113	5.69	1075.7	61.2	232	18	7.7	125.6	9.7
1912	166,553	70	23	32.8	42.0	13.8	3,199	156	4.88	1920.7	93.6	339	18	5.3	203.5	10.8
1911	151,958	50	8	16.0	32.9	5.3	2,714	225	8.29	1786.0	148.1	194	26	13.4	127.7	17.1
1910	132,720	28	13	46.4	21.1	9.8	2,264	143	6.31	1705.8	107.7	355	42	11.8	267.5	31.6
1909	122,390	48	14	29.2	39.2	11.4	1,118	43	3.8	913.5	35.1	326	47	14.4	266.4	38.4

STILLBIRTHS

Month	Males	Females	1919 Totals	1918 Totals
January	8	10	18	16
February	4	5	9	10
March	8	3	11	30
April	20	8	28	24
May	8	9	17	12
June	8	12	20	20
July	11	13	24	26
August	8	3	11	19
September	11	5	16	16
October	16	9	25	22
November	3	10	13	19
December	10	4	14	31
Totals	115	91	206	245

	1919	1918	1917	1916	1915	1914
Rate per 1,000 total births	37.7	41.8	34.1	40.7	37.2	42.5
Ratio of males to 100 females	126	145	116	105	156	134

STILLBIRTHS ACCORDING TO THE NATIONALITY OF MOTHER

	Rates per 1,000 total births. 1919	1918	1917	1916	1915	1914
Central and Southern European	35	38	40	41	41	61
Canadian	33	37	26	41	37	38
British	39	49	30	39	33	36

ILLEGITIMACY

Year	Illegitimate births	Per cent. of total births
1919	270	4.9
1918	306	5.2
1917	267	4.7
1916	290	4.6
1915	333	5.5
1914	349	5.8
1913	379	6.5
1912	383	7.6
1911	268	5.8
1910	285	7.3
1909	228	5.8

BIRTHS
(EXCLUDING STILLBIRTHS)

Month	Males	Females	1919 total	1918 total
January	241	197	438	440
February	195	174	369	495
March	219	196	415	455
April	256	232	488	522
May	191	189	380	507
June	179	191	370	487
July	232	217	449	473
August	214	192	406	491
September	218	219	437	441
October	259	271	530	407
November	225	221	446	379
December	273	253	526	524
Totals	2,702	2,552	5,254	5,621

	1919	1918	1917	1916	1915	1914
Ratio of males to 100 females	106	107	108	106	108	105
Twin births	77	70	64	68	72	68
Triple births	----	----	1	1		

Attendant at Birth (including Stillbirths)—

	1919		1918	
Physicians	4,548	83.3%	4,707	80.2%
Midwives and no attendant	899	16.7%	1,159	19.8%
Unknown	13			

COMPARATIVE TABLE

Year	Population	No. of births	Rate per 1,000
1919	183,378	5,254	28.65
1918	183,595	5,621	30.61
1917	182,848	5,446	29.79
1916	200,090	5,980	29.88
1915	201,981	5,823	28.82
1914	203,255	5,789	28.48
1913	184,730	5,577	30.2
1912	166,553	5,041	30.2
1911	151,958	4,614	30.4
1910	132,720	3,890	29.3
1909	122,390	3,898	31.8
1908	118,252	3,738	31.6

NATIVITY OF MOTHERS OF INFANTS BORN, 1919

(Including Stillbirths)

Canada	1,600
England and Wales	1,092
Ireland	202
Scotland	531
Australia	3
Channel Isles	2
India	4
British West Indies	2
Malta	3
South Africa	1
Austria-Hungary	863
Belgium	15
Denmark	12
Finland	3
France	14
Germany	20
Greece	1
Holland	6
Iceland	51
Italy	25
Norway	15
Roumania	37
Russia	605
Serbia	2
Spain	1
Sweden	53
Switzerland	6
Turkey	1
China	2
Japan	1
Syria	5
Brazil	1
United States	264
Ocean	1
Unknown	16
Total	5,460

SUMMARY

	Births		Percent of Totals	
	1919	1918	1919	1918
Canada	1,600	1,610	29.30	27.45
British Isles	1,825	1,813	33.43	30.91
Scandinavia	131	138	2.40	2.35
Southern and Central Europe	1,604	1,959	29.38	33.40
United States	264	308	4.83	5.25
Other Countries	19	29	.35	.50
Unknown	17	8	.31	.14
Totals	5,460	5,866	100.00	100.00

DEATHS

(EXCLUDING STILLBIRTHS)

Month	Males	Females	1919 Totals	1918 Totals	Annual rates per 1,000 1919	1918
January	142	131	273	164	17.53	10.52
February	92	78	170	152	12.08	10.79
March	120	134	254	162	16.30	10.39
April	106	102	208	186	13.80	12.33
May	98	63	161	156	10.34	10.00
June	72	52	124	136	8.23	9.01
July	64	64	128	112	8.22	7.18
August	85	76	161	119	10.34	7.63
September	74	51	125	128	8.29	8.48
October	73	71	144	254	9.24	16.29
November	84	68	152	762	10.08	50.50
December	111	97	208	375	13.35	24.05
Total	1,121	987	2,108	2,706	11.49	14.74

	1919	1918	1917	1916	1915	1914
Ratio of males to 100 females	113	117	107	124	128	122

COMPARATIVE TABLE

Year	Population	No. of deaths	Rate per 1,000
1919	183,378	2,108	11.49
1918	183,595	2,706	14.74
1917	182,848	1,728	9.45
1916	200,090	2,072	10.35
1915	201,981	1,763	8.73
1914	203,255	1,955	9.62
1913	184,730	2,204	11.9
1912	166,553	2,236	13.4
1911	151,958	1,951	12.8
1910	132,720	1,803	13.6
1909	122,390	1,454	11.9
1908	118,252	1,434	12.1

DEATHS BY MONTH, SEX AND AGE PERIOD, 1919

Month		Under 1		1 to 2		3 to 4		5 to 9		10 to 19		20 to 29		30 to 39		40 to 49		50 to 59		60 to 69		70 to 79		80 to 89		90 to 99		Totals	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
January		30	18	7	10	6	3	5	5	12	8	21	30	33	29	8	12	6	4	5	5	7	6	2	1			142	131
February		32	15	6	6	3	2	5	5	4	3	10	10	11	12	10	9	5	4	3	6	1	6	2				92	78
March		32	27	10	6	...	3	2	2	7	11	11	25	24	24	11	9	10	11	7	8	4	6	2	2			120	134
April		41	30	8	9	1	2	5	2	6	4	9	10	13	17	3	5	4	6	5	7	5	7	6	3			106	102
May		25	14	4	6	3	1	5	5	4	2	5	7	10	5	7	6	11	4	15	8	7	2	2	2		1	98	63
June		15	9	4	1	3	1	3	3	3	2	5	3	9	6	8	9	6	9	7	3	8	3	1	3			72	52
July		27	24	5	2	2	1	1	5	2	6	7	5	7	8	2	2	3	3	3	3	4	3	1	2			64	64
August		29	22	7	10	5	2	1	2	5	1	6	8	4	9	9	2	8	8	7	8	2	4	2				85	76
September		25	13	7	5	1	3	6	3	6	3	4	3	4	4	4	5	2	4	8	2	5	5	1	1	1		74	51
October		14	21	6	5	4		3	4	6	4	4	2	6	7	8	8	10	8	5	3	5	6	2	2		1	73	71
November		30	13	4	5	1	2	1	3	3	3	10	7	10	10	3	4	6	10	6	5	8	1	2	5			84	68
December		33	23	6	3	3	2	8	8	1	4	8	15	11	8	13	9	8	5	14	11	5	7	1	2	...		111	97
Totals		333	229	74	68	32	22	45	47	59	51	100	125	142	139	86	80	79	76	85	69	61	56	24	23	1	2	1121	987
Combined Totals	1919	562		142		54		92		110		225		281		166		155		154		117		47		3		2,108	
Totals	1918	516		181		77		102		159		475		419		260		171		177		111		52		6		2,706	
Percentages of Totals	1919	26.66		6.74		2.56		4.36		5.22		10.67		13.33		7.88		7.35		7.31		5.55		2.23		.14		100.00	
Totals	1918	19.07		6.69		2.85		3.77		5.88		17.55		15.48		9.61		6.32		6.54		4.10		1.92		.22		100.00	

NATIVITY OF DECEDENTS, 1919

Winnipeg	752	Belgium	2
Manitoba (rest of)	134	Bulgaria	1
Alberta	4	Denmark	5
British Columbia	3	France	2
New Brunswick	11	Germany	7
Newfoundland	1	Greece	2
Nova Scotia	17	Holland	5
Ontario	247	Iceland	26
Prince Edward Island	7	Italy	12
Quebec	33	Norway	8
Saskatchewan	29	Portugal	1
Canada	22	Roumania	3
England	230	Russia	101
Ireland	61	Serbia	1
Scotland	117	Sweden	16
Wales	14	Switzerland	1
Australia	1	China	8
Gibraltar	1	America	2
India	1	United States	66
Jamaica	1	Unknown	22
West Indies	1		
Austria-Hungary	130	Total	2,108

SUMMARY

	Deaths		Per cent. of total	
	1919	1918	1919	1918
Canada	1,260	1,406	59.77	51.96
British Isles	422	573	20.02	21.17
Europe (exclud. Brit. Isles)	324	578	15.37	21.36
United States	66	86	3.13	3.18
Asia	8	15	.38	.55
Other Countries	6	8	.29	.30
Unknown	22	40	1.04	1.48
Totals	2,108	2,706	100.00	100.00

Social Status of Decedents

Single, under 16 years	518	388	906	42.98
Single, 16 years and over	183	116	299	14.18
Total Single	701	504	1,205	57.16
Married	362	373	735	34.87
Widowed	52	108	160	7.59
Divorced	1		1	.05
Unknown	5	2	7	.33
Totals	1,121	987	2,108	100.00

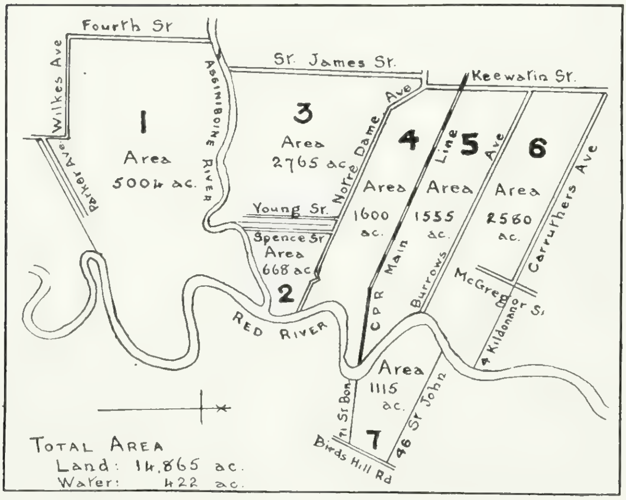
Stillbirths and Deaths in Hospitals, 1919

	Deaths	Stillbirths	
General Hospital	447	46	Surgical and medical
Children's Hospital	143		As above in children
King George Hospital	122	3	Communicable diseases
King George Annex	1		Epidemic Influenza
King Edward Memorial	66		Advanced tuberculosis
Grace Hospital	60	21	Maternity
Misericordia Hospital	43	18	Maternity
North Winnipeg Hospital	2	3	Surgical and Medical
Victoria Hospital	54	9	Surgical and Medical
St. Boniface Hospital	24		Surgical and Medical
Military Hospitals	3		Epidemic Influenza
Mineral Springs Sanitorium	1		Private Hospital.
	966	100	

Deaths by Wards, 1919.

Ward	Population	Deaths	Rate per 1,000, 1919	Rate per 1,000, 1918
1	25,942	254	9.79	10.04
2	18,131	162	8.93	13.02
3	43,705	411	9.40	12.14
4	24,372	293	12.02	15.78
5	34,301	289	8.42	12.52
6	25,373	268	10.56	13.72
7	11,554	106	9.18	11.50
City	183,378	1,783	9.72	12.67
Outside	....	325	....	....
Totals	....	2,108	11.49	14.74

Map of Ward Boundaries



INFANT MORTALITY STATISTICS

A detailed analysis of the mortality in each ward is given in the report of the Bureau of Child Hygiene, pages 117 to 136.

COMPARATIVE INFANT MORTALITY TABLE

Year	No. births	No. deaths	Rate per 1,000 births
1919	5,254	562	106.9
1918	5,621	516	91.8
1917	5,446	545	100.1
1916	5,980	700	117.0
1915	5,823	619	106.3
1914	5,789	729	125.9
1913	5,577	947	169.8
1912	5,041	1,006	199.5
1911	4,614	762	165.1
1910	3,890	628	161.4
1909	3,898	513	131.6
1908	3,738	535	143.1

INFANT MORTALITY ACCORDING TO NATIONALITY OF MOTHERS

(Excluding Stillbirths)

Nationality	1919		Rates per 1,000 live births			
	Births	Deaths	1919	1918	1917	1916
Canadian	1,547	160	103	77	86	83
English and Welsh	1,049	106	101	76	101	117
Irish	194	20	103	88	65	104
Scotch	510	42	82	64	72	101
American (U.S.A)	255	16	63	67	92	64
Scandinavian	125	9	72	75	58	46
Southern and Central European	1,548	204	132	115	130	159

INFANTILE MORTALITY—CAUSE OF DEATH

Number of Deaths

Diseases	1919	1918	1917
Acute infectious diseases	41	73	26
Other general diseases	34	24	33
Of nervous system and of organs of special sense	23	15	24
Of respiratory system	109	72	130
Of digestive system	132	118	108
Malformations and diseases of early infancy	201	197	205
All other diseases	22	17	19
Totals	562	516	545

Rates per 1,000 Births

Diseases	1919	1918	1917
Acute infectious diseases	7.8	13.0	4.8
Other general diseases	6.5	4.3	6.1
Of nervous system and of the organs of special sense	4.4	2.7	4.4
Of respiratory system	20.7	12.8	23.9
Of digestive system	25.1	21.0	19.8
Malformations and diseases of early infancy	38.2	35.0	37.6
All other diseases	4.2	3.0	3.5
Totals	106.9	91.8	100.1

Per Cent. of Total

Diseases	1919	1918	1917
Acute infectious diseases	7.3	14.1	4.8
Other general diseases	6.0	4.6	6.0
Of nervous system and of the organs of special sense	4.1	2.9	4.4
Of respiratory system	19.4	14.0	23.9
Of digestive system	23.5	22.9	19.8
Malformations and diseases of early infancy	35.8	38.2	37.6
All other diseases	3.9	3.3	3.5
Totals	100.0	100.0	100.0

CLASSIFICATION OF AGES OF DECEDENTS UNDER ONE YEAR OF AGE

Age	No. of deaths	Rate per 1,000 births	1919 Per cent. of total
Minutes to one week	143	27.2	25.4
Over 1 to 2 weeks	49	9.3	8.7
Over 2 to 3 weeks	28	5.3	5.0
Over 3 weeks to 1 month	25	4.5	4.8
Minutes to 1 month	245	46.6	43.6
Over 1 to 2 months	52	9.9	9.2
Over 2 to 3 months	46	8.8	8.2
Minutes to 3 months	343	65.3	61.0
Over 3 to 6 months	122	23.2	21.7
Over 6 to 9 months	52	9.9	9.2
Over 9 and under 12 months	.45	8.5	8.1
	562	106.9	100.0

For comparison with the above, the final figures for the years 1918 and 1917 are given below:

1918

Age	No. of deaths	Rate per 1,000 births	Per cent. of Total
Minutes to 3 months	324	57.6	62.8
Over 3 to 6 months	77	13.7	14.9
Over 6 to 9 months	63	11.2	12.2
Over 9 months and under 12	52	9.3	10.1
Totals	516	91.8	100.0

1917.

Minutes to 3 months	352	64.6	64.6
Over 3 to 6 months	90	16.6	16.5
Over 6 to 9 months	60	11.0	11.0
Over 9 and under 12 months	43	7.9	7.9
Totals	545	100.1	100.0

	1919 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
	1—General Diseases													
1	Typhoid fever		1	2	5	3	1		1	1	2	2	1	19
1a	Para Typhoid fever												1	1
6	Measles												2	2
7	Scarlet fever			1	2	2	2	1	3	2	2	2	5	22
8	Whooping cough	1			1		2	5	3	5	2			19
9	Diphtheria and croup	1	8	5	2	5	3	1	1	6	7	1	6	46
10	Influenza	142	25	75	34	5	4	2	2	2	3	3	4	301
	Totals, Nos. 1 to 10	144	34	83	44	15	12	9	10	16	16	8	19	410
14	Dysentery							1					1	2
18	Erysipelas	1				1				1	1	1	1	6
19	Other epidemic diseases										1			1
20	Purulent infection and septichaemia			2	1	5	4	1	1			4		18
26	Pellagra											1		1
28	Tuberculosis of the lungs	16	17	19	9	11	9	7	12	7	6	4	15	132
29	Acute miliary tuberculosis					1	1						2	4
30	Tuberculous meningitis	1	1	2		2	1	2	4	2	1	1		17
31	Abdominal tuberculosis	1	1	2	1		2	2	1	2	1	1	1	15
32	Pott's disease					1		2	1					4
33	White swellings	1							1	1			1	4
34	Tuberculosis of other organs									1				1
	Totals, Nos. 29 to 35	3	2	4	1	4	4	6	7	6	2	2	4	45
36	Rickets			1										1
37	Syphilis	1	1		1	1	1	1	2	1	1	2	3	15
38	Soft chancre, gonococcus infection	1												1
40	Cancer and other malignant tumors of the stomach, liver	5	2	6	4	8	6	1	5	1	6	5	4	53
41	Cancer and other m. t. of the peritoneum, intestines, rectum	1	1		2	3	1		2	1			3	14
42	Cancer and other m. t. of the female genital organs	1	5	5	2	2	3	1		1	2		2	24
43	Cancer and other malignant tumors of the breast	2	1	2							2	3	2	12
44	Cancer and other malignant tumors of the skin	1							1					2
45	Cancer and other malignant tumors of other organs		1	6	6	2	2	1	4	1	3	1	2	29
	Totals, Nos. 39 to 45a	10	10	19	14	15	12	3	12	4	13	9	13	134

1919 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
46 Other tumors (tumors of the female genital organs exc.)	1				1	1							3
47 Acute articular rheumatism		1				1			1				3
48 Chronic rheumatism and gout										1			1
50 Diabetes				2	1			4		1	2	4	14
51 Exophthalmic goitre				1	1						1		3
53 Leuchaemia					1		1		1	1	1		5
54 Anaemia, chlorosis	1	1	1	2	4	1		1	1	1			13
55 Other general diseases											1		1
56 Alcoholism (acute or chronic)											1		1
Totals, "Other General Diseases"	5	3	4	7	15	8	4	8	5	7	14	9	89
II.—Diseases of the Nervous System and of the Organs of Special Sense													
60 Encephalitis				1			1						2
60a Encephalitis (Lethargic)											12	13	25
61 Simple meningitis	1	2	2	6	1	1	1	1	1	1	2	1	20
62 Locomotor ataxy	1				1								2
63 Other diseases of the spinal cord		1							1		2	3	7
63a Acute anterior poliomyelitis					1								1
64 Cerebral haemorrhage, apoplexy	4	4	2	8	5	7	4	1	3	4	4	10	56
65 Softening of the brain												1	1
66 Paralysis without specified cause					1	1						1	3
69 Epilepsy		1								1			2
71 Convulsions of infants		1	1	3			2	2	2			1	12
73 Neuralgia and neuritis						1	1			1			3
74 Other diseases of the nervous system	1	1	1		1		1	1		1	1	1	9
76 Diseases of the ears	1										1		2
Totals	8	10	6	18	10	10	10	5	7	8	22	31	145
III—Diseases of Circulatory System													
77 Pericarditis			1										1
78 Acute endocarditis	1	3	1		1		2		1	2	3	2	16
79 Organic diseases of the heart	6	6	9	13	13	11	4	8	10	13	6	4	103
80 Angina pectoris	1	1	2		1				2	3		2	12

	1919 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
81	Diseases of the arteries, atheroma, aneurysm, ets	1	1	1	1	1	4	1	1	2	1	3	1	18
82	Embolism and thrombosis				1		1	2	2			1		7
84	Diseases of the lymphatic system (lymphangitis, etc.)					3								3
85	Haemorrhage; other diseases of the circulatory system	1	1	1		1		1						5
	Totals, excluding Nos. 78 and 79	3	3	5	2	6	5	4	3	4	4	4	3	46
	IV.—Diseases of the Respiratory System													
87	Diseases of the larynx		1								1			2
88	Diseases of the thyroid body								1				1	2
89	Acute bronchitis	1	3	2	7	1		1			1	2	2	20
90	Chronic bronchitis	1	1	3	1	1			1	1	1	2	1	13
91	Broncho-pneumonia	22	10	21	14	10	2	4	3	5	5	14	12	122
92	Pneumonia	5	8	8	10	8	2	1	3	3	5	7	11	71
93	Pleurisy			3								1		4
94	Pulmonary congestion, pulmonary apoplexy	1		1	2			1				1	1	7
96	Asthma			2										2
98	Other diseases of the respiratory system (tuberculosis ex.)	1		2	1				1	1		1		7
	Totals, excluding Nos. 91 and 92	4	5	13	11	2		2	3	2	3	7	5	57
	V.—Diseases of the Digestive System													
100	Diseases of the pharynx	1					1			1			1	4
101	Diseases of the oesophagus						1							1
102	Ulcer of the stomach		1	1		1		1	1	1				6
103	Other diseases of the stomach (cancer ex.) (2 yrs. and over)		5	1	1	1					1	1		10
103a	Other diseases of the stomach (cancer ex.) (under 2 yrs.)	2	2	1	2			4	4		2	4	3	24
104	Diarrhoea and enteritis (under 2 yrs.)	5	7	3	10	6	6	17	36	14	11	4	6	125
105	Diarrhoea and enteritis (2 yrs. and over)	1				1		2	4	2	1			11

1 9 1 9 **CAUSE OF DEATH** **(By Month)**	January	February	March	April	May	June	July	August	September	October	November	December	Totals
108 Appendicitis and typhlitis	1	3	7	4	1	4	1	3	3		2	3	32
109 Hernia, intestinal obstruction	6	1	1	1	1	1		2	1	2	5	4	25
110 Other diseases of the intestines							1		1				2
112 Hydatid tumor of the liver					1								1
113 Cirrhosis of the liver		1	1	1	2				1			1	7
114 Biliary calculi	1	1	1			1		1		1	2	1	9
115 Other diseases of the liver		2		1	1		1		1			1	7
116 Diseases of the spleen			1		1	1							3
117 Simple peritonitis (non-puerperal)	1	2		1	2		1		1	1			9
118 Other diseases of the digestive system (cancer & tuber. ex.)			1	1		1	1				1	2	7
Totals, excluding Nos. 103a and 104	11	16	14	10	12	10	8	11	12	6	11	13	134
VI.—Non-Venereal Diseases of the Genito-Urinary System and Annexa													
119 Acute nephritis		1	1				1			2	2	1	8
120 Bright's disease	2	4	4	5	3	3	3	7	4	3	2	13	53
122 Other diseases of the kidneys and annexa		2				2		1		1		1	7
124 Diseases of the bladder	1												1
126 Diseases of the prostate					2					1			3
129 Uterine tumor (non-cancerous												1	1
130 Other diseases of the uterus						1		1					2
131 Cysts and other tumors of the ovary						1	1			1		1	4
132 Salpingitis and other diseases of the female genital organs		1						1		1			3
133 Non-puerperal diseases of the breast (cancer excepted)								1					1
Totals, excluding Nos. 119 and 120	1	3			2	4	1	4		4		3	22
VII.—The Puerperal State													
134 Accidents of pregnancy	1					1	1						3
135 Puerperal haemorrhage				1						1			2
136 Other accidents of labor			1				2		1		1		5
137 Puerperal septichaemia		1	1	1	2		1	1		1		1	9

1919 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
138 Puerperal albuminuria and convulsions	1				1			1			1	3	7
139 Puerperal phlegmasia alba dolens, embolus, sudden death				1							1		2
141 Puerperal diseases of the breast													
Totals	2	1	2	3	3	1	4	2	1	2	3	4	28
VIII.—Diseases of the Skin and of the Cellular Tissue													
143 Furuncle		1					1		1	1			4
144 Acute abscess		1	2		1							2	6
145 Other diseases of the skin and annexa					2						2		4
Totals		2	2		3		1		1	1	2	2	14
IX.—Diseases of the Bones and of the Organs of Locomotion													
146 Diseases of the bones (tuberculosis excepted)	1	1			1								3
Totals	1	1			1								3
X.—Malformations													
150 Congenital malformations (stillbirths not included)		5	4	5	1	1	1		1	3	2	6	29
XI.—Early Infancy													
151 Congenital debility, icterus and sclerema	13	11	19	14	10	5	13	5	9	6	11	18	134
152 Other causes peculiar to early infancy	1	2	4	4	3	4	3	4	5	4	4	3	41
Totals	14	13	23	18	13	9	16	9	14	10	15	21	175
XII.—Old Age													
154 Senility	1				2	1	1	2	1	2	1	2	13
XIII.—External Causes													
155 Suicide by poison				1				2					3
157 Suicide by hanging or strangulation						1							1
158 Suicide by drowning						1	2		1				4
159 Suicide by firearms						1	1	1					3
160 Suicide by cutting or piercing instruments			1				1					1	3

1919 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
165 Other acute poisonings			1	1			1	1		1			5
166 Conflagration										1			1
167 Burns (conflagration excepted)	2	1	2		1	1				1	2		10
168 Absorption of deleterious gases (conflagration excepted)				2			1	1					4
169 Accidental drowning		1			1	2	2					1	7
170 Traumatism by firearms			1			2	1	1					5
171 Traumatism by cutting or piercing instruments									1				1
172 Traumatism by fall	2			1		1	1			6	3	1	15
174 Traumatism by machines				1			1						2
175a Traumatism by automobiles	1		1	2		1		3	1	3			12
175b Traumatism by railroads		1			1		3		1		1	2	9
175c Traumatism by other crushing (landslides, etc.)			1	3	2	1		1	2	1		1	12
176 Injuries by animals				1		1		1					3
181 Electricity (lightning excepted)						1			1				2
182 Homicide by firearms										1			1
186 Other external violence	1		1										2
Totals	6	3	8	12	5	13	14	11	7	14	6	6	105
XIV.—Ill-defined Diseases													
189 Cause of death not specified or ill-defined	1	1				1	1	1					5
Totals	1	1				1	1	1					5
Grand Totals	273	170	254	208	161	124	128	161	125	144	152	208	2108

1 9 1 9
CAUSE OF DEATH
(By Sex and Age)

		SEX		AGE IN YEARS													
		Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	Totals
	I.—General Diseases																
1	Typhoid fever	9	10					3	7	3	5	1					19
1a	Para-Typhoid fever		1				1										1
6	Measles	2		2													2
7	Scarlet fever	11	11	1	4	4	12	1									22
8	Whooping cough	12	7	11	7	1											19
9	Diphtheria and croup	24	22	4	6	14	20	2									46
10	Influenza	133	168	23	27	11	13	26	80	85	18	6	12				301
	Totals, Nos. 1 to 10	191	219	41	44	30	46	32	87	88	23	7	12				410
14	Dysentery		2	2													2
18	Erysipelas	6		2	2							1	1				6
19	Other epidemic diseases		1		1												1
20	Purulent infection and septichaemia	12	6	11	1		2			1	2	1					18
26	Pellagra	1							1								1
28	Tuberculosis of the lungs	81	51			1		14	49	39	16	5	4	4			132
29	Acute miliary tuberculosis	1	3				1	1	2								4
30	Tuberculous meningitis	8	9	4	3	3	4	2	1								17
31	Abdominal tuberculosis	5	10	2	1	2	1	2	2	3	1	1					15
32	Pott's disease	3	1					1		2		1					4
33	White swellings	2	2				2	1		1							4
34	Tuberculosis of other organs	1							1								1
	Totals, Nos. 29 to 35	20	25	6	4	5	8	7	6	6	1	2					45

36	Rickets	1		1													1
37	Syphilis	8	7	11						3			1				15
38	Soft chancre, gonococcus infection		1	1													1
40	Cancer and other malignant tumors of the stomach, liver	30	23						2	2	10	17	15	6	1		53
41	Cancer and other m. t. of the peritoneum, intestines, rectum	3	11							2	1	2	7	2			14
42	Cancer and other m. t. of the female genital organs		24					1	1	5	9	5	1	1	1		24
43	Cancer and other malignant tumors of the breast		12						1	2	1	6		1	1		12
44	Cancer and other malignant tumors of the skin	2									1	1					2
45	Cancer and other malignant tumors of other organs	18	11		1		2			3	4	8	7	4			29
	Totals, Nos. 39 to 45a	53	81		1		2	1	4	14	26	39	30	14	3		134
46	Other tumors (tumors of the female genital organs, exc.)	1	2						1				2				3
47	Acute articular rheumatism	2	1				1		1		1						3
48	Chronic rheumatism and gout	1								1							1
50	Diabetes	5	9					1		1	4	3	3	2			14
51	Exophthalmic goitre		3								2	1					3
53	Leuchaemia	3	2		1			1		1	1	1					5
54	Anaemia, chlorosis	8	5							3	2	5	1	2			13
55	Other general diseases		1			1											1
56	Alcoholism (acute or chronic)	1							1								1
	Totals, "Other General Diseases".	49	40	28	5	1	3	2	5	12	12	9	8	4			89
II.	**—Diseases of the Nervous System and of the Organs of Special Sense**																
60	Encephalitis	2		1	1												2
60a	Encephalitis, Lethargic	15	10		1		2	2	5	5	4	4	1	1			25
61	Simple meningitis	11	9	7	6	2	2	1	1			1					20
62	Locomotor ataxy	2									1		1				2
63	Other diseases of the spinal cord	3	4						1		4	1	1				7
63a	Acute anterior poliomyelitis		1					1									1
64	Cerebral haemorrhage, apoplexy	28	28	3					2	1	5	2	14	19	10		56
65	Softening of the brain	1											1				1

1 9 1 9
CAUSE OF DEATH
(By Sex and Age)

		SEX		AGE IN YEARS													
		Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	Totals
66	Paralysis without specified cause	2	1						1			2					3
69	Epilepsy	2		1					1								2
71	Convulsions of infants	8	4	10	2												12
73	Neuralgia and neuritis	3			1								1	1			3
74	Other diseases of the nervous system	6	3	1						2	4	1	1				9
76	Diseases of the ears	2			1					1							2
	Totals	85	60	23	12	2	4	4	11	9	18	11	20	21	10		145
	III.—Diseases of the Circulatory System																
77	Pericarditis	1												1			1
78	Acute endocarditis	10	6	1			2	3		3	3	4					16
79	Organic diseases of the heart	62	41	1			1	3	5	11	13	18	20	23	7	1	103
80	Angina pectoris	9	3								3	1	4	3	1		12
81	Diseases of the arteries, atheroma, aneurysm, etc	14	4						1	1	1	3	3	6	3		18
82	Embolism and thrombosis	4	3					1		3		2	1				7
84	Diseases of the lymphatic system (lymphangitis, etc.)	2	1	2	1												3
85	Haemorrhage; other diseases of the circulatory system	3	2					1					2	2			5
	Totals, excluding Nos. 78 and 79	33	13	2	1			2	1	4	4	6	10	12	4		46
	IV.—Diseases of the Respiratory System																
87	Diseases of the larynx	2			1	1											2
88	Diseases of the thyroid body	1	1						1				1				2

89	Acute bronchitis	11	9	16	1	1								1	1		20
90	Chronic bronchitis	6	7					1	1			5	3	2	1		13
91	Broncho-pneumonia	59	63	68	18	2	1	1	7	6	3	2	4	4	6		122
92	Pneumonia	41	30	22	9		4	3	6	10	4	3	4	3	3		71
93	Pleurisy	3	1							3			1				4
94	Pulmonary congestion, pulmonary apoplexy	1	6	3					1	1				1	1		7
96	Asthma	1	1							1		1					2
98	Other diseases of the respiratory system (tubercolusis ex.)	6	1							2	3	2					7
	Totals, excluding Nos. 91 and 92	31	26	19	2	2		1	3	7	3	8	5	4	3		57
	V.—Diseases of the Digestive System																
100	Diseases of the pharynx	2	2				2			1	1						4
101	Diseases of the oesophagus		1		1												1
102	Ulcer of the stomach	4	2						1	1	2			2			6
103	Other diseases of the stomach (cancer ex.) (2 yrs .and over)	8	2		1				1	2		2	2	1	1		10
103a	Other diseases of the stomach (cancer ex.) under 2 yrs.)	12	12	23	1												24
104	Diarrhoea and enteritis (under 2 yrs.)	69	56	103	22												125
105	Diarrhoea and enteritis (2 yrs. and over)	5	6		5	2	2	1			1						11
108	Appendicitis and typhlitis	20	12			1	6	9	3	11	1		1				32
109	Hernia, intestinal obstruction	14	11	5	1	2		1	2	1	2	4	3	3	1		25
110	Other diseases of the intestines		2							2							2
112	Hydatid tumor of the liver	1												1			1
113	Cirrhosis of the liver	5	2								2	1	3	1			7
114	Biliary calculi	1	8							1	1	5	1	1			9
115	Other diseases of the liver	5	2			1		1			2	1	2				7
116	Diseases of the spleen	1	2							1	1				1		3
117	Simple peritonitis (non-puerperal)	2	7	1				1	2		3	1	1				9
118	Other diseases of the digestive system (cancer & tuber. ex.)	3	4					1		1	1	2	2				7
	Totals, excluding Nos. 103a and 104	71	63	6	8	6	10	14	9	21	17	16	15	9	3		134

1919 CAUSE OF DEATH (By Sex and Age)	SEX		AGE IN YEARS													
	Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	Totals
VI.—Non-Venereal Diseases of the Genito-Urinary System and Annexa																
119 Acute nephritis	5	3	1	3		2		1		1						8
120 Bright's disease	29	24					1	4	8	5	11	10	13	1		53
122 Other diseases of the kidneys and annexa	1	6	3	1						1	2					7
124 Diseases of the bladder	1						1									1
126 Diseases of the prostate	3											2		1		3
129 Uterine tumor (non-cancerous)		1						1								1
130 Other diseases of the uterus		2							1	1						2
131 Cysts and other tumors of the ovary		4							3			1				4
132 Salpingitis and other diseases of female genital organs		3						1	2							3
133 Non-puerperal diseases of the breast (cancer excepted)		1							1							1
Totals, excluding Nos. 119 and 120	5	17	3	1			1	2	7	2	2	3		1		22
VII.—The Puerperal State																
134 Accidents of pregnancy		3						1	2							3
135 Puerperal haemorrhage		2						1	1							2
136 Other accidents of labor		5						2	2	1						5
137 Puerperal septichaemia		9					1	4	2	2						9
138 Puerperal albuminuria and convulsions		7						3	4							7
139 Puerperal phlegmasia alba dolens, embolus, sudden death		2							2							2
Totals		28					1	11	13	3						28

	VIII.—Diseases of the Skin and of the Cellular Tissue																
143	Furuncle	3	1	4													4
144	Acute abscess	1	5	2	2					1			1				6
145	Other diseases of the skin and annexa	2	2	3	1												4
	Totals	6	8	9	3					1			1				14
	IX.—Diseases of the Bones and of the Organs of Locomotion																
146	Diseases of the bones (tuberculosis excepted)	1	2	3													3
	Totals	1	2	3													3
	X.—Malformations																
150	Congenital malformations (stillbirths not included)	9	20	27	2												29
	XI.—Early Infancy																
151	Congenital debility, icterus and sclerema	79	55	134													134
152	Other causes peculiar to early infancy	30	11	40	1												41
	Totals	109	66	174	1												175
	XII.—Old Age																
154	Senility	3	10										1	4	6	2	13
	XIII.—External Causes																
155	Suicide by poison	2	1							2	1						3
157	Suicide by hanging or strangulation	1								1							1
158	Suicide by drowning	3	1						3		1						4
159	Suicide by firearms	2	1					1	1			1					3
160	Suicide by cutting or piercing instruments	3								2		1					3

1919 CAUSE OF DEATH (By Sex and Age)	SEX		AGE IN YEARS													
	Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	Totals
165 Other acute poisonings	2	3	1					3		1						5
166 Conflagration	1									1						1
167 Burns (conflagration excepted)	8	2		3	1	2	1		2					1		10
168 Absorption of deleterious gases (conflagration excepted)	4								2	1		1				4
169 Accidental drowning	5	2			2	2	1	2								7
170 Traumatism by firearms	4	1					2	1		1		1				5
171 Traumatism by cutting or piercing instruments	1						1									1
172 Traumatism by fall	14	1				1	1	1	4	2	3	1	2			15
174 Traumatism by machines	2						1		1							2
175a Traumatism by automobiles	10	2				3	5	1	2	1						12
175b Traumatism by railroads	5	4				1	1		2	1	3	1				9
175c Traumatism by other crushing (landsides, etc.)	10	2		1	2		2	3		1	1	2				12
176 Injuries by animals	3						1		2							3
181 Electricity (lighting excepted)	1	1					2									2
182 Homicide by firearms	1								1							1
186 Other external violence	2						1		1							2
Totals	84	21	1	4	5	9	20	15	22	11	9	6	2	1		105
XIV.—Ill-defined Diseases																
189 Cause of death not specified or ill-defined	3	2	1	1					1	1		1				5
Totals	3	2	1	1					1	1		1				5
Grand Totals	1121	987	562	142	54	92	110	225	280	166	155	154	117	48	3	2108

METEOROLOGICAL STATISTICS FOR THE YEAR 1919.

(Furnished by courtesy of Prof. J. F. Cross, St. John's College Observatory, Winnipeg).

1919	Average maximum temperature	Average minimum temperature	Average mean temperature	Highest temperature during month	Lowest temperature during month	Precipitation in inches	Hours bright sunshine	Average wind, miles per hour	Average percentage of cloud	Clear days	Fair days	Cloudy days.
January	19.1	2.9	11.0	37.0 on 24th	–25.2 on 1st	.18	100.4	12.0	50%	6	18	7
February	12.1	–4.0	4.0	29.6 on 10th	–30.3 on 26th	.45	102.2	10.4	47	8	11	9
March	24.8	6.2	15.5	38.6 on 31st	–27.9 on 5th	1.63	129.9	11.6	.41	10	13	8
April	52.3	31.2	41.7	69.7 on 21st	13.1 on 24th	1.11	204.8	13.4	48	8	17	5
May	71.6	43.8	57.7	95.0 on 28th	17.9 on 5th	1.91	312.7	9.3	39	11	15	5
June	79.6	56.2	67.9	88.7 on 16th	35.0 on 3rd	4.95	263.7	11.0	46	4	21	5
July	80.9	57.1	69.0	90.1 on 16th	44.6 on 10th	3.83	330.7	11.9	45	4	23	4
August	77.9	53.7	65.8	93.4 on 19th	36.0 on 27th	3.15	306.6	11.6	42	6	21	4
September	66.3	45.8	56.0	80.4 on 1st	25.7 on 28th	3.24	176.8	11.4	60.0	5	15	10
October	42.4	24.3	33.3	75.4 on 8th	31.1 on 27th	1.64	133.0	11.8	66	1	20	10
November	21.5	4.9	13.2	41.6 on 17th	–19.0 on 30th	2.28	103.6	12.7	55	5	16	9
December	8.0	–5.5	1.8	39.0 on 25th	28.0 on 8th	.67	119.6	11.3	40	12	13	6